This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

+ *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.

+ *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.

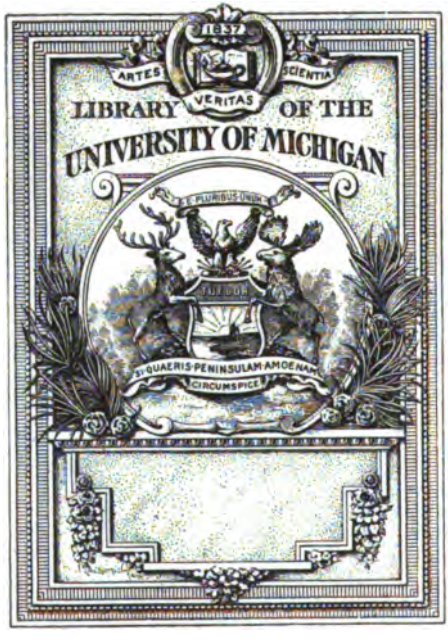
+ *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.

+ *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at `http://books.google.com/`

B 438420


ARTES
VERITAS
SCIENTIA
LIBRARY OF THE
UNIVERSITY OF MICHIGAN
SI QUAERIS PENINSULAM AMOENAM
CIRCUMSPICE

HC
1
.R4

REPORTS

T 3976

FROM THE

CONSULS OF THE UNITED STATES.

VOL. XL.

Nos. 144, 145, 146, and 147.

MONTHS: SEPTEMBER, OCTOBER NOVEMBER, AND DECEMBER, 1892.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1892.

CONSULAR REPORTS

ON

COMMERCE, MANUFACTURES, ETC.

No. 144.—SEPTEMBER, 1892.

TRADE AND INDUSTRIES OF GHENT.

REPORT BY CONSUL OSBORNE.

COTTON-SPINNING.

The year 1891 has not been as favorable as the previous one for this important industry, which is always influenced more or less by the prices of the raw material. The fluctuations for the year may be seen by the following quotations for "middling American" per pound:

	Pence.
Beginning of January	$5\frac{5}{16}$
End of July	$4\frac{3}{8}$
Beginning of October	$4\frac{13}{16}$
End of December	$4\frac{3}{16}$

Many of the local spinners made hasty and extensive purchases when the prices were high, and naturally their profits for the year were affected.

FLAX AND TOW SPINNING.

The year has been a prosperous one for this branch. Flax was abundant and cheaper than in 1890. Prices of the flax yarns, as well as of the fine and medium numbers in tow yarns, advanced. However, this was not the case with the coarse varieties of tow yarns, because of an overproduction in their manufacture, the spinners seeking to reduce the store of tow accumulated by the increasing employment of Russian flax, which, as I explained in a previous report, yields far more tow than the Belgian flax.

Exportations of flax yarns were chiefly made to England and Holland. The exportations to France are not considered important enough to warrant

any fear for the industry from the new tariff in that country. In 1890 the exportations of Belgian yarns to France were less than 2 per cent of the entire production of Belgium. As for Germany, although no new concessions are made in the recent commercial treaty, the spinners are satisfied with the prospect of twelve years' stability of relations between Belgium and that country.

JUTE-SPINNING.

The harvest of 1890–'91 was the largest on record, being 2,636,000 bales for all Europe. Prices of the raw material were low and steady until summer, when reports began to arrive concerning the next crop, which will only yield about 1,750,000 bales for Europe. Throughout the year the spinners did a good business, but, as the advance in the price of the raw jute declared itself, the prices of their product became less and less remunerative, since the weavers refused to pay the equivalent increase. At the end of the year the price of the raw material was 60 per cent higher than it had been at the beginning of the year. At present writing it is nearly double that of January, 1891. A decrease in production seems the only remedy for the jute industry in its present precarious situation.

LINEN-WEAVING.

For some years this industry has not enjoyed its pristine prosperity. The manufacture of mixed linen has been supplanting that of the pure Flemish linen, once so renowned. The cheapness of the former gives it a great advantage. One variety was put on the local markets and obtained a great sale during the year at 3 ells for 1 franc, or 8⅓ American cents per yard.

By reason of the increasing manufacture of mixed linen made of thread tissue and cotton, and by reason of an overproduction, the prices of the medium and ordinary qualities of the pure linen have fallen particularly low. The future of the industry depends upon the ability of the weavers to find foreign markets.

HORTICULTURE.

The growing importance of this industry is shown by the increase in the number of establishments. In 1889 I estimated the number of nurserymen in Ghent and its environs at 180 and the total number of greenhouses at 1,000. From statistics kindly compiled for me by Mr. C. Petrick, of Ghent, I learn that the number of nurserymen has increased to 250 and that these have, in the aggregate, 2,200 greenhouses, covering a total area of 2,650,000 square feet.

The most important event of the year was the imposition by the new French tariff of a minimum duty of 58 cents per 220 pounds on the entry into France of certain kinds of high-class plants, such as *Azalea indica*, orchids, and palms. This duty is levied on the gross weight of the packages, much to the disgust of the Belgians. Local horticulturists are divided in

opinion as to the effect that the duty will have on the trade. Some think that it will bring about a preference for the culture of another class of plants. The general opinion is that it will turn the attention of exporters more than ever to the United States as a market.

I may add that by the new commercial treaty between Belgium and Germany plants are admitted free into the latter country.

MANUFACTURE OF BEET-ROOT SUGAR.

The beet-root crop was unsatisfactory in weight. The amount worked was 138,000 tons (metric), against 154,000 tons in 1890. The cultivators had good reason to complain. However, the beet root was of good quality, and the manufacture was easy and rapid. Good prices have been obtained for the sugar.

CONSTRUCTION OF MACHINERY.

During the year the local machine shops have been well provided with orders. Apprehension is rightly felt concerning future exportations to France, in view of the heavy duties of the new tariff law. The head of one of the leading establishments of Ghent informs me that these duties are absolutely prohibitive.

AGRICULTURE AND CEREALS.

The prolonged and severe winter of 1890–'91 is memorable in Belgium not only for the distress it caused among the poor in cities, but also for its disastrous effect upon agriculture. There was almost continual freezing for three months and little or no snow to protect the crops. The result was that the wheat and rye crops were ruined. To replace them new crops of barley and oats were sown in the spring. There was the same state of affairs in France, Germany, and Holland, where new crops had to be sown as in Belgium.

Distress stared Europe in the face. As early as May France announced a reduction in the duties on the entry of corn and flour. But what was most alarming was the prohibition by Russia of the exportation of her cereals after August 15. This edict made it evident at once that that source of supply for Europe had failed. In this deplorable condition of affairs the United States came to the rescue with the magnificent harvest of 723,000,000 bushels, and such enormous shipments were made to the leading ports that a fall in prices was the result. Extensive purchases were made in Belgium, and the fears inspired by the failure of the European crops were abated by the resulting abundance.

The prices of domestic wheat ranged from $3.57 to $5.02 per 220 pounds. The latter price was reached in April. Domestic rye fluctuated from $2.70 to $5.21 per 220 pounds.

There was never so great a quantity of oats sown in Belgium as during the past year under the circumstances above described. The harvest was

plentiful. Exports to the amount of 6,750 tons were made from the port of Ghent alone. The prices varied from $2.32 to $3.57 per 220 pounds.

The harvest of barley sown in the spring was abundant, and the prices remained steadier than for the other cereals.

The importation of fertilizers has for several years been extensive. It is interesting to note the changes. Some years ago Peruvian guano was almost exclusively employed. Subsequently English sulphates of ammonia had the preference. Since 1887 extensive importations of Chilean nitrates of soda have been made. In 1891 Belgium consumed 89,000 tons of this article, of which a large quantity was employed in Flanders.

THE PORT OF GHENT.

The maritime movement by the Terneuzen Canal in 1891 was the greatest in the history of the port. The number of vessels entering was 1,015 (911 steamers and 104 sailing vessels), with a total tonnage of 493,798 tons (Morson), against 952 vessels (819 steamers and 133 sailing vessels), having a total tonnage of 427,351 tons, in 1890. The occasion of the arrival of the thousandth vessel on December 21 was celebrated under communal auspices by the display of flags and the ringing of bells.

There were no American vessels among those arriving, but 4 steamers and 5 sailing vessels came from the United States laden with cotton and wood. The English flag was carried by 70 per cent of the vessels and the German by 13 per cent. The majority of the vessels brought and carried away a mixed cargo.

The importations for the year amounted to 528,533 tons (metric), being an increase of 15 per cent over 1890. The exportations amounted to 270,043 tons, a decrease of 6 per cent from the previous year.

The entry of 117 vessels exclusively laden with English coal, an increase of more than 50 per cent over the number for 1890, demonstrates that Ghent is becoming an important market for English coal. It would be very gratifying if our American coal could be introduced here. Making due allowance for freight, I believe it to be entirely practicable. Throughout the past winter I have been compelled to pay $6.75 a ton (metric) for anthracite and $4.82 a ton for bituminous kitchen coal, both inferior in quality to the products of Pennsylvania mines.

Notwithstanding the increasing importance of the port of Ghent, there are some things that show a deplorable lack of enterprise, chief of which I may mention the failure to construct a larger lock at the entrance of the Terneuzen Canal, which would permit the safe entrance in the canal and up to Ghent of vessels drawing as much as 24 feet, instead of only 17½ feet as at present; secondly, the failure to complete the dry docks at this port. The local chamber of commerce, which has been demanding these improvements for some time, throws the entire responsibility for the delay upon the Central Government.

Table showing the number and tonnage of vessels entering the port of Ghent during the year 1891.

Month.	Sailing vessels.		Steamers.		Total.	
	No.	Tons.	No.	Tons.	No.	Tons.
January	.....	.....	57	29,278	57	29,278
February	5	600	66	31,193	71	31,793
March	6	1,682	82	41,128	88	42,810
April	15	2,670	66	32,872	81	35,542
May	16	5,677	70	33,650	86	39,327
June	10	3,050	80	43,602	90	46,652
July	7	2,360	77	43,215	84	45,575
August	12	4,518	84	42,524	96	47,042
September	12	3,428	74	36,861	86	40,289
October	10	1,857	93	46,261	103	48,018
November	8	1,878	90	45,569	98	47,447
December	3	497	72	39,428	75	39,925
Total	104	28,217	911	465,581	1,015	493,798

EXPORTS TO THE UNITED STATES.

The value of the exports from the district to the United States for the year 1891 was $1,260,199.02. Although this was somewhat less than for the previous year, there was a notable increase in the shipments of the majority of articles. I will consider the leading items.

Paper stock.—This item, comprising rags, waste, cuttings, etc., has in past years constituted more than one-half the valuation of the exports, but has been decreasing for the last few years. The value for the year was $571,899.26, being no less than $93,607.99 below the figure for 1890. As I have previously reported, I believe that the old rags imported into the United States from Ghent should be subjected to a compulsory and thorough disinfection. At present absolutely no precautions are taken. A smallpox epidemic now prevailing in Ghent is, with reason, by many attributed to infection in imported old rags. Great quantities are sent from Ghent to the United States, which are collected, previous to being sorted and baled here, in the gutters of France, Belgium, and Germany.

Manufactured goods.—The exports for the year amounted to $160,016.57, the highest figure ever attained and an increase of $13,250.17 over the year 1890. This increase merits our attention. The goods were almost exclusively linen textiles, such as bleached table linen, ticking canvas, crash, and twills woven of pure flax thread and flax waste. By the provisions of our present tariff law manufactures of flax containing more than one hundred threads to the square inch are subject to a duty of 35 per cent ad valorem, which was formerly the duty upon all the above varieties; but such textiles having less than one hundred threads to the square inch must pay a duty of 50 per cent ad valorem. Three-fourths of the exports for 1891 were subject to the increased duty. Nevertheless the amount of the exports has been steadily increasing.

Statement showing increase in amount of exports.

1889	$94,816.82
1890	146,766.40
1891	160,016.57

Table showing the value of declared exports from the consular district of Ghent to the United States during the year ended December 31, 1891.

Articles.	Quarter ended—				Total.
	March 31.	June 30.	September 30.	December 31.	
Albumen			$1,552.00	$927.70	$2,479.70
Baskets				252.89	252.89
Braids, silk	$2,470.80				2,470.80
Chicory	15,079.21	$20,829.78	12,232.13	31,933.83	80,074.95
Flax and tow	31,457.57	44,672.22	1,736.36	23,891.22	101,757.37
Hair, human	2,032.80	1,416.00	2,801.80	1,540.00	7,790.60
Horses, breeding	5,280.00		4,200.00	14,000.00	23,480.00
Lace	20,903.24	16,233.53	6,853.47	23,651.02	67,641.26
Machinery		455.00	1,585.60	6,152.55	8,193.15
Manufactured goods	52,619.42	34,438.90	29,507.00	43,451.25	160,016.57
Marble	990.52	201.55		915.63	2,170.70
Oil paintings	160.00				160.00
Paper stock	128,664.45	146,233.88	129,431.36	167,569.57	571,899.26
Plants	1,268.20	13,776.55	19,605.73	20,588.66	55,239.14
Rabbit skins and hair	38,627.34	50,533.96	49,354.21	15,902.45	154,417.96
Regalia, church			698.20	300.00	998.20
Statuary	315.00	160.00		105.00	580.00
Thread, cotton	4,871.87	6,376.60	2,260.76	326.99	13,836.22
Yarns, jute and tow	2,284.54	1,548.42	2,317.33	452.50	6,602.79
Miscellaneous				200.46	200.46
Total	307,024.96	336,876.39	264,135.95	352,161.72	1,260,199.02

BELGIAN WAGES.

In order to learn the exact explanation of this increase, I have made inquires among the exporters, and I am convinced, by the unanimity of their responses, that it is due to one thing only, *i. e.*, the great disparity of wages between Belgium and the United States, giving Belgian manufacturers an immense advantage. Those with whom I have conversed do not claim any superiority of quality for their goods over American productions. On the contrary, they frankly admit the excellence of our textile fabrics. Commenting on the fact that 75 per cent of all the dress goods consumed in the United States to-day are of American manufacture, a representative Belgian exporter declares that before ten years the United States will export cotton textiles to Belgium.

To understand the condition of labor here one must see the farm laborers in the Belgian flax fields upon their hands and knees from sunrise to sunset, toilsomely grubbing for days and weeks at the weeds among the growing flax. For this work they receive on an average in this consular district exactly 19.3 American cents a day, together with three meals of coarse brown bread and poor beer.

The spinners are slightly better paid than the weavers, since their trade is more difficult. Moreover, wages at Ghent are a trifle higher than in smaller places. From a quantity of statistics which I have compiled for this district I find that the average wages for flax-spinners are 48 cents per day; those for the weavers are 38⅜ cents per day. The daily hours of labor are twelve, including two periods of rest aggregating one hour and a half.

I present the following table of daily wages in the flax industry throughout all its stages, furnished me by a linen manufacture of Courtrai. It comprises, in his judgement, the average wages (or earnings, for in some branches it is common to pay workmen by the piece) paid in East and West Flanders.

Branch of industry.	Average daily wages.	Branch of industry.	Average daily wages.
Flax culture	*$0.19⅛	Weavers	*$0.38⅜
Steeping the flax	.38⅜	Winding the yarn:	
Thrashing the flax	.48	Children	.09⅜
Spinners	.48	Women	.14¼
Warping	.48	Bleaching the linen	.48

* With board.

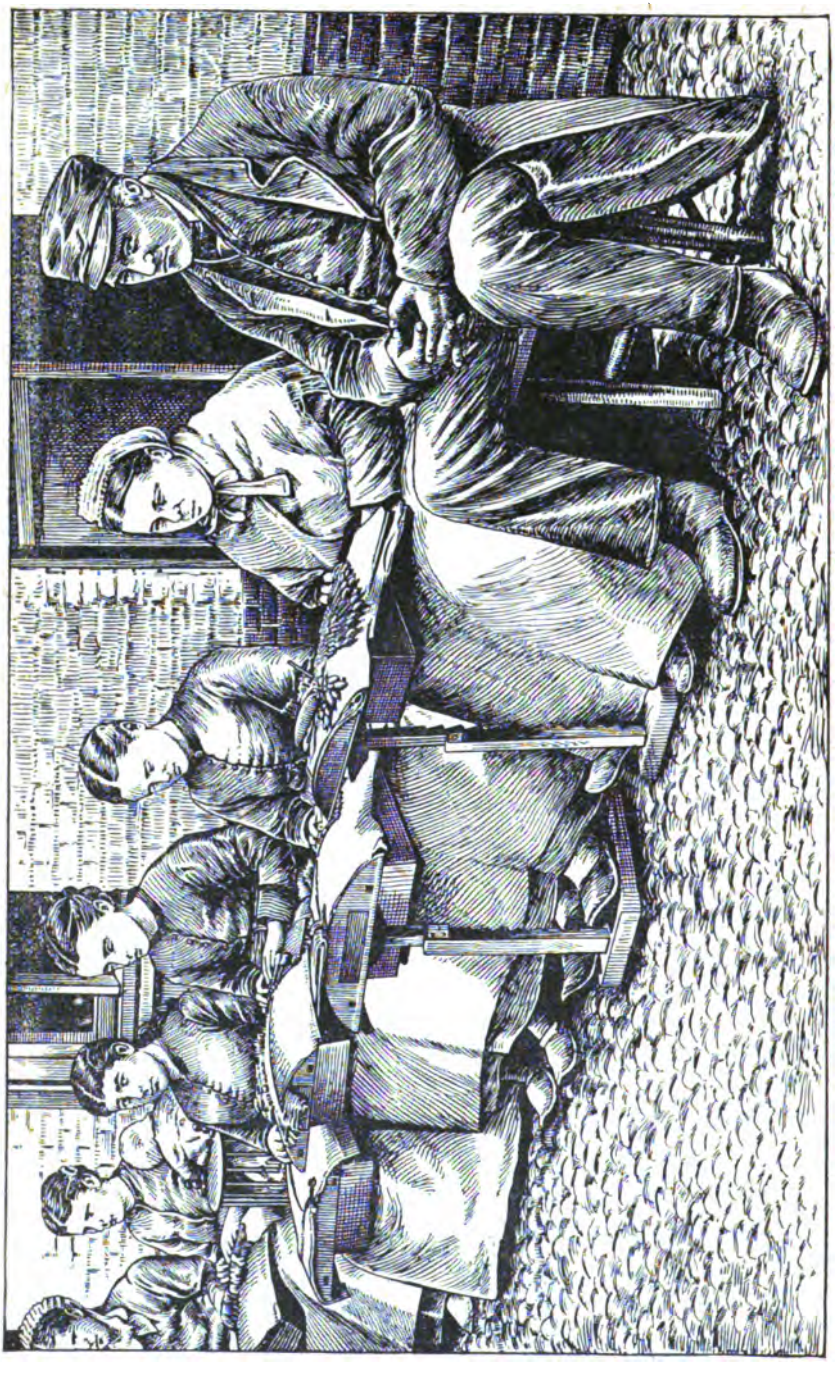
All of the above figures are for male labor, except for winding the yarn.

HANDMADE LACE.

The value of the exports for the year was $67,641.26. Since 1889 there has been a decrease. The lace was all handmade, mostly cotton and linen torchon for trimmings and insertions. There are no factories. The women are employed in making the lace at their homes. The principal exporter informs me that they earn on an average throughout Flanders 14½ cents per day, and work on the lace almost steadily from 6 o'clock in the morning until 9 o'clock at night. If we make a reduction of two hours for repose from this period of fifteen hours, we have thirteen working hours remunerated by 14½ cents, or about 1⅛ American cents per hour. Some women even begin at 5 o'clock in the morning and work until 9 at night. I am also informed that there are many who only earn 11½ cents a day.

CHICORY.

It is gratifying to me to be able to call attention to the manufacture of chicory as an American industry of recent growth. The statistics of exports from this district to the United States for the last three years clearly demonstrate this fact. In 1889 the value of the exports of chicory amounted to $11,666.14 and consisted exclusively of granulated and prepared chicory, grown and manufactured in Belgium. By the tariff law of 1883 both the raw chicory root and the prepared article were alike subject to a specific duty of 2 cents per pound. By the tariff law which went into operation October 6, 1890, the unground chicory root was put upon the free list, but the manufactured chicory is still subject to a duty of 2 cents per pound. The effect was scarcely observable in 1890, for the exports of chicory in that



Typical group of Flemish lace-makers at work before their dwelling.

year, which amounted to $39,440.03, consisted almost entirely of the granulated roots as formerly. It was the same with the beginning of 1891, but as the year advanced a change became apparent. Factories for the manufacture of chicory were established in New York and environs. Heavy shipments of the raw root were made from here. Several manufacturers transferred their plants from the Flanders to the United States. At this writing only one out of many continues to export granulated chicory to the United States. This is the largest chicory establishment in the world, but under American competition it is rapidly going to the wall.

The total value of the chicory exports from this district to the United States for the year 1891 was $80,074.95, of which more than half was represented by the raw root. Instead of being manufactured in Belgium, the manufacture is now carried on in the United States.

PLANTS.

The value of the exports for 1891 was $55,239.14, the highest amount ever reached and an increase of 35 per cent over the previous year. In former years the exports to the United States consisted of rare botanical specimens, while now they are "nursery stock" or "trade plants" of a high class, such as azaleas, palms, and araucarias. The palms for export vary in price here from 50 cents to $10. There is a growing demand for them in the United States for decorative purposes. I attribute the increasing importations to the fact that our nurserymen consider their culture too tedious, it usually requiring several years; but there is no reason why anything that is successfully grown in Ghent can not be just as successfully grown in the United States. No one will dispute that American horticulture has taken great strides towards perfection, and its exposition at Chicago next year will make that fact patent to the world.

COST OF LIVING.

It is often asserted that the purchasing power of an equal amount of money is greater in Belgium than in the United States. As far as concerns the hiring of labor this is true, as may be illustrated by the fact that one can hire a good carpenter at Ghent for 5½ American cents an hour and a domestic servant for $3.86 a month. But when the cost of living among the working classes of the two countries is considered in reference to the disparity in their wages, the fact is generally ignored that a poorer standard of living prevails here than in the United States. To illustrate this: If the American workman would be contented with cheap qualities of potatoes and bread as a regular diet, with an occasional horse steak, instead of having varied meats and vegetables every day, I feel sure that he would find the purchasing power of his dollar to be fully as great as is that of its international equivalent in Belgium, especially as the latter country annually consumes great quantities of our cereals and as it has been found profitable to ship extensive cargoes of horse meat from New York to Ghent to supply the tables of the poorer classes. Inasmuch as beef is more expensive here than in the United States, it is

needless for me to say that it is rarely seen on the table of a Ghent workman who earns only 48 cents, or even 58 cents, a day, which is above the average. However, a good horse steak at 6½ cents is not beyond his means. Furthermore, if it were the fashion for the American workman to wear wooden shoes they could be made cheaper in the United States than here.

In order to live in comfortable circumstances in Ghent (population 150,000), there are many expenses encountered which counterbalance the cheapness of labor. For instance, if vegetables are cheaper than in the United States, the difference is more than made up by the high prices of meats and the cost of wine or other beverage necessitated as a substitute for the water, which is generally considered unfit to drink. The best canned meats, fish, and fruits are imported from the United States, and are, of course, more expensive. Clothing is cheaper here, but, on the other hand, fuel, both coal and wood, is much more expensive. It is true that house rents are lower than in a corresponding city in the United States, but this fact does not amount to much when it is remembered that the tenant must pay (1) an annual tax of 5 per cent on the amount of his rent, (2) an annual tax on every door and window in his house, and (3) an annual tax of 1 per cent on the value of his furniture, besides other taxes. Moreover, he gets the bare structure utterly devoid of the fixtures usually included in the United States.

All things taken into consideration, I find that the purchasing power of a given sum of money is little, if any, greater in Belgium than in the United States.

JOHN B. OSBORNE,
Consul.

UNITED STATES CONSULATE,
Ghent, April 30, 1892.

HOP CULTURE IN BELGIUM.

REPORT BY CONSUL ROOSEVELT, OF BRUSSELS.

According to the last official census, taken in 1880, there were in Belgium 4,185 hectares devoted to hop-culture, of which 1,803 hectares were in Brabant, Namur, and Hainaut, divided as follows: In Brabant, 1,513 hectares; in Hainaut, 287 hectares; in Namur, 3 hectares.

It is impossible to procure official statistics bearing upon hop-culture in this country, and the following information, obtained through the honorable minister of agriculture and the courtesy of the mayor at Alost, is only approximate. The total weight of the hop crop harvested in the environs of Alost in 1891 was about 20,000 bales of 100 kilograms each. The average yield in that district for the years 1885–'90, was 30,000 bales. There remained in the hands of dealers on January 1, 1892, from 2,500 to 2,700 compressed bales, that is to say, 125 kilograms per bale, while the amount held by growers did not exceed 100 ordinary bales. In preceding years the quantity remaining in the hands of dealers and growers frequently exceeded

15,000 bales. Hops grown in Brabant are principally sold to England as Alost hops. The average market price in 1891 was 1.52 francs per kilogram.

Table showing the imports of hops in 1890.

Countries.	Quantity.	Value.
	Kilograms.	*Francs.*
England	78,815	212,800
France	155,723	420,452
Germany	4,168,898	11,256,025
Holland	327,441	884,091
Luxembourg	30,264	81,713
Russia	40,745	110,011
Other countries	10,339	27,915
Total	4,812,225	12,993,007

Table showing the exports of hops in 1890.

Countries.	Quantity.	Value.
	Kilograms.	*Francs.*
Argentine Republic	15,854	42,806
Australia	14,961	40,395
Chile	18,481	46,837
England	2,534,662	5,974,551
France	1,719,326	3,427,709
Germany	27,162	47,760
Holland	337,901	851,306
Spain	15,423	41,327
Sweden and Norway	12,504	20,882
United States	750,673	1,990,615
Other countries	20,157	46,818
Total	5,505,104	12,531,006

The following are names of hop-growers considered capable judges of local hop crops: Louis Bott, Meerbeke, near Ninove; Felix Goossens, Assche, Brabant; Pierre Voostens, Baerdegera, near Alost; Crunon D. Clercq, Alost; A. & T. Veys frères, Vlamertinghe, near Vaperinghe.

The dealers in hops are as follows: A. Centerick-Van Roye, 68 rue de Birmingham, Brussels; C. Declercq-Billen, 4 Avenue du Boulevard, Brussels; Em. Kühstohs, 106 rue de l'Arbre-Benit, Ixelles; M. Laitern, 12 rue de Sœurs-Noires, Mons, Hainaut.

Mr. Ad. Frentz is director and owner of the Gazette du Brasseur, No. 6 rue Gaucheret, Brussels.

There are no organizations or associations of hop dealers in Brussels. There is a commission appointed by the Government having as its sole object the investigation of means for advancing hop-culture.

It is not anticipated that the hop industry in this country will materially increase. The condition remains normal, notwithstanding efforts which are being made to advance it so as to resist competition of foreign hops.

American hops are very little employed here, native hops naturally being preferred by the brewers, excepting in low-fermentation breweries, which

almost exclusively use hops from Bavaria, Bohemia, Würtemburg, and Alsace. These hops are also employed in certain proportion by high-fermentation breweries, especially when not too dear in price, and do not very essentially differ from Belgian hops.

The increase in the consumption is scarcely perceptible, and in good years the yield considerably exceeds the demand, as was exemplified in the years 1885, 1886, and 1887, when large quantities of the yield remained in the hands of speculators.

GEO. W. ROOSEVELT,

UNITED STATES CONSULATE, *Consul.*

Brussels, May 6, 1892.

AMERICAN PRODUCTS IN SEVILLE.

REPORT BY CONSULAR AGENT SCHMIDT.

The imports at the port of Seville from the United States during the year 1891 were as follows:

Articles.	Quantity.	Tariff duty.	Ports from which received.
	Kilograms.		
Bacon, hams, and canned meats.	236,696	50 pesetas per 100 kilograms...	Liverpool.
Crude petroleum	9,198,085	21 pesetas per 100 kilograms...	New York and Philadelphia.
Cotton-seed oil	11,654	23 pesetas per 100 kilograms...	Liverpool.
Fine wood	1,750	55 centimes per 100 kilograms..	Savannah.
Lumber in beams, staves, and boards.	1,675,370	2.75 pesetas per meter	Savannah, Pensacola, and Mobile.
Indigo	747	10 pesetas per 100 kilograms...	Liverpool.
Machinery	2,189	8 pesetas per 100 kilograms...	Do.
Printed books	28	38.50 pesetas per 100 kilograms.	Do.
Printed matter	273	.....do.....	Do.
Resin	418	41 centimes per 100 kilograms..	Do.
Salt meat	3,789	11.80 pesetas per 100 kilograms.	Do.
Samples of paper	24	Free	Do.
Samples of wine	6	2 pesetas per liter	Do.
Sewing machines	2,146	8 pesetas per 100 kilograms....	Do.
Tallow	7,806	1 peseta per 100 kilograms.....	Do.
Typewriters	5	9 pesetas per 100 kilograms.....	Do.
Utensils, clocks, hardware, novelties, etc.	189	24 pesetas per 100 kilograms...	Do.
Oilcloth	13	Free	Do.
Varnishes	828	24 pesetas per 100 kilograms ..	Do.

At first I thought there was some exaggeration in the figures given above from the books of the custom-house of this port, and to satisfy myself I called on the proprietors of one of the principal stores here dealing in bacon, hams, and canned meats—Messrs. Arcona & Co., who do a yearly business of about $500,000—to get their opinion as to whether they thought these figures correct. They informed me that they considered them right.

My doubts in this direction were originated by the information I have that there are some foreign houses—Messrs. ———, of Liverpool, jobbers in

colonials, cereals, and staples, and Messrs. ———, of Hamburg, etc., jobbers in American manufactures, hardware, clocks, and novelties—who have their agents here in Spain, where they import American goods, which are declared at the Spanish custom-house as productions of the countries in which these houses are established, to obtain the benefit of lower duties according to the conventional treaties which may exist, between Germany and Spain, for instance; but, on inquiring into the matter, I am informed by the custom-house authorities that the American goods imported here from England are not misrepresented as to country of origin, but declared to be American. This, however, it is claimed, is not the case with the American manufactures imported from Germany, with which nation Spain has tariff treaties in force which favor all German manufactures; consequently the American goods imported via Germany are not included in this memorandum, because they are declared to be of German production.

To post myself on the importance of this portion of American trade, I called on the following houses established here selling utensils, clocks, hardware, novelties, etc., to hear their opinions and get their estimates as to the amount of American manufactures they import yearly through Germany, mostly through Messrs. Markt & Co., which may be considered as an American house, as they have a branch in New York. The portion of American trade done through Germany not included in this list, the manufactures being called German, may be estimated at from $8,000 to $10,000 annually.

Señor José Perez Abascal, doing about $50,000 worth of business annually in utensils, clocks, hardware, novelties, etc., expresses himself as follows:

I still sell about two hundred American alarm clocks; formerly I used to sell that number of a dozen different models, which have gradually been substituted by the German article, because it can be offered to the trade cheaper and also pays less freight than goods brought from the United States via Liverpool. Table oilcloths and sheet-iron nickel trays used to be good articles, and I would sell a thousand dozen of trays and a thousand pieces of cloth yearly, but now England makes the same article delivered for less money here, because freights are less than from the United States. I still import about $1,000 worth yearly of American novelties, rolled gold-plate buttons, etc., through Hamburg, but this trade has also decreased through French and German imitations.

Señor Angel Martinez, doing a business in the same line amounting to $50,000 yearly, claims to have sold as much as $12,000 yearly of American goods some five or six years ago when he was in the habit of going to New York and would make purchases of $7,000 at one time. He also says that mostly all this line of goods has been copied by France, Germany, and England. But Mr. Martinez believes that trade with the United States stands a good chance of increasing. Their quality is recognized as superior, and as soon as there was a treaty negotiated trade would increase fourfold.

The Bazar de la Union, which does a business of about $30,000 yearly, imports a couple of hundred dollars' worth of utensils, clocks, hardware, novelties, etc., and intends to try American plated ware, which article these parties consider of superior manufacture and very acceptable to the trade.

The Bazar Sevillano, doing about $60,000 worth of business yearly, also thinks American silver plate a good article, and it could be imported if it did

not pay more duty than the French. They also say that if there were a treaty importation would doubtless increase, because there are many other articles of manufacture which might be imported.

The Bazar de la Campana, which imports about $600 worth of American firearms, finds it difficult, however, to obtain from the Spanish consul at Hamburg the necessary certificate of origin, without which the governor of this province does not allow the custom-house to enter the arms.

The Bazar Ingles does some $80,000 worth of business yearly in hardware. It imports about $1,500 worth of American hardware through Messrs. Markt & Co., of Hamburg, such as meat-chopping and coffee-grinding machines, other utensils, and American manufactures, etc.

J. SCHMIDT,
Consular Agent.

UNITED STATES CONSULAR AGENCY,
Seville, May 14, 1892.

AMERICAN PATENTS IN EUROPE.

REPORT BY CONSUL-GENERAL GOLDSCHMIDT, OF VIENNA.

I have the honor to transmit herewith a translation of the treaty between Austria-Hungary and the German Empire for the mutual protection of inventions, trade-marks, and designs. In transmitting the same I beg to be allowed to offer a few suggestions on the existing patent law and practice in Austria-Hungary, with special reference to inventors and inventions of the United States.

Having of late received a number of letters inquiring into this matter from parties in the United States, I have given the subject some study and found that the extraordinarily small participation of the United States in the import of Austria-Hungary is partly caused by the neglect of our manufacturers to protect their patents, the expense for obtaining which being much smaller than they are led to believe by interested parties. This expense could be greatly reduced, as I have shown, if the proper *modus operandi* was better known to both the attorney and the patent owner.

I think if the widest publicity would be given by the Department to these suggestions it would fill a long-felt want and serve as an answer to many inquiries recently made at this consulate-general.

Patentable in Austria-Hungary are (1) new products of industry, (2) new means of production, (3) new methods of production.

A patent can not be obtained in Austria-Hungary for (1) scientific principles; (2) the preparation of articles of food, beverages, and medicines; (3) inventions the practice of which is against the existing laws.

There is no examination as to the novelty of the invention, the only conditions being that the invention be described (and shown) with sufficient clearness to enable a person skilled in the respective art to carry it into prac-

tice, that the first annuity is paid, that the two copies of specification and drawings are exactly alike, and that all the pieces be properly stamped.

The patent is granted on the exclusive risk and responsibility of the applicant. When two or more applications are filed for the same invention, all patents will be granted, but only that granted upon the first application will be valid.

A patent will expire: (1) With the expiration of a foreign patent granted previously for the same invention; (2) if it is found that the specification is not sufficiently clear; (3) if anybody produces legal proof that the invention patented was not new at the time of the application, that is, that it was in use in Austria-Hungary or known through a printed publication, or that the invention had been imported from abroad, and the Austrian patent had not been granted to the rightful owner of the previously obtained foreign patent or to his legal representatives (assignees); (4) if the owner of a patent in force shows that the invention of the later patent is identical with that of his own; (5) if the owner of the patent has not within one year at the latest after the day of issuing of the patent document commenced to work his invention in Austria-Hungary or if he has entirely interrupted this working during any two subsequent years.

It will be seen from the foregoing that in general the Austrian patent law would be protective and acceptable enough to American inventors but for the last-mentioned paragraph on the working of patents. It is to this paragraph that I would call the special attention of Americans, not only with regard to Austria, but to the European countries in general, which, with the exception of Great Britain, all have a clause in their patent laws making the validity of a patent more or less dependent upon the commencement and the continuation of the working in the respective country within specified times. The creation of this rule in the different countries is due to the desire to insure the home industry against the importation of new articles from abroad, the imitation of which is protected by letters patent. This law, wherever it exists, must undoubtedly be considered as an acknowledgement of inventive and industrial inferiority; but it exists, and the American inventor has to reckon with it.

The American inventive genius, fostered by the liberal patent law of the United States, has long been proverbial in Europe, and American inventions are generally sought after and universally employed. In the remotest villages of remote European provinces the traveler will find American implements and American tools; but in many cases only the invention is American, while the article is an imitation produced by enterprising German or other manufacturers, who often not only copy the article, but also take out a patent for it, which, as long as it is not disputed, must be considered as valid by others.

The American inventor or originator does not derive any profit from this trade for the sole reason that he has neglected to patent his article abroad.

If the reasons for such neglect are inquired for, it will be found that there are three important causes which form an impediment and discourage Americans from taking out European patents.

The first and most important of these causes is the before-mentioned law which prescribes that the invention must be worked in the country within a certain short time. This obstruction may, however, as long as such laws exist, in my opinion, be overcome by the American patentee by simply giving a license to one or more good manufacturers in the respective country for working the patent on easy terms, as, for instance, a cheap royalty, such license or contract being restricted to one or two years. In this manner the patent will be worked in full compliance with the requirements of the law, while the patentee, even if the royalty he gets during these two years does not rise above a nominal figure, not only saves the expense of having his patent formally worked in the first and before the third year, a formality costing at least a couple of hundred dollars, but he has the great benefit of his invention becoming known, and his chances increase for advantageously placing his patent. If he has given license but for a limited district, he may, with the exception of France, where the import of patented goods is interdicted, import his article all the same and be safe against imitations, his patent being perfectly valid. The argument that it is difficult to sell a patent in Europe holds good only for the out-and-out sale of a patent for cash before the article has been introduced; but for any practical invention, especially of American origin, a manufacturer may be found in Austria and elsewhere who will work the patent for a reasonable royalty, and who will later on also buy the patent.

The second cause of discouragement is the general want on the part of American inventors of proper connections in Europe for the placing of their patents. But there is no lack of honest, energetic, and reliable people in Europe who are ready and willing to undertake the placing of patented American inventions in the manner indicated, and I think the United States consulates should be in a position to advise American inventors on this head by furnishing the addresses of suitable people.

The third cause which prevents Americans from taking out European patents more generally is closely connected with the foregoing one, and, although the last mentioned, is not the least important one—the excessively high prices charged in America for procuring European patents. The American inventor, as a rule, pays to his attorney at home the average price of $100 for each European patent, with the exception of the Russian patent, which costs much more.

The American inventor does not know, nor is he ever told, what the actual costs of foreign patents are, for these costs, if they are known by the American attorney, are guarded as a strict trade secret.

Now, the actual costs of obtaining an Austro-Hungarian patent, for instance, are the following: First year's annuity, 26.25 florins ($11); cost of stamps, 5 florins ($2), on an average; total cost of patent of fifteen years, including one annuity, $13. For this patent the inventor pays at home $100. It is true that, if the drawings and specifications are not complicated, the preparation of these papers is generally included in the price of $100; but, as in Austria and most other European countries only tracings are required, and

as in every case prints are accepted, these costs are nominal. The same disproportions, and in some cases even greater still, between the actual cost of the patent and the prices charged for them in the United States will be found in all other European patents. The actual cost of a German patent, if not rejected, including the first year's annuity, amounts to 50 marks, or $12.50. The actual cost of a Belgian patent, including the first year's annuity, is but $2 altogether. Still, the average price the American inventor pays for these and other patents is $100. The reason for this is that even the majority of American patent solicitors are without proper and reliable European connections. Therefore, most American patent solicitors, when instructed, for instance, to procure an Austrian patent for their client, will transmit the order to a New York firm who make European work their specialty. This firm, however, does not always send the order to Austria direct, but for business and other reasons frequently passes the order to a London or Berlin house, whence at last it is sent to the Vienna solicitor to be filed. Thus it will happen that a case of this kind passes through five hands before it is filed, and, as it is obvious that each of these agencies wants to profit by the transaction, it is not to be wondered at that the American inventor has to pay $100 and sometimes more for a patent, the actual cost of which is $13 or even only $2.

Having gone to this expense and at last obtained the foreign patent, the patentee is informed that before the expiration of the first year he has not only to pay the second annuity, the costs of which naturally—although perhaps actually very low—increase in proportion to the number of hands it has to pass, but that in order to insure the validity of his patent he must get his invention worked in that country.

As his solicitor at home is, as a rule, not in a position to bring the patentee in connection with the proper persons abroad for placing the patent, a formal working must be established, the average cost of which is again $100. Thus the inventor entering upon the second year of his foreign patent has already paid, with the second annuity, about $250 without knowing how, when, and where to place his patent.

This should be prevented in the interest of the American industry, and could, in my opinion, be simply done by enlightening the American inventors on the subject and by facilitating, by the aid of the consulates, the direct intercourse between these inventors and the proper and responsible parties in Europe, who will procure patents at reasonable prices, and who could afterwards be instrumental towards placing such patents or bringing the owners in correspondence with suitable manufacturers. The law prescribing the working of a patent within a specified time is hard enough for all foreign inventors, but it is absolutely unjust where it requires such working within the first year of the patent, as in Austria.

During the negotiations between Germany and Austria with respect to the annexed treaty an attempt was made by Germany to obtain more liberal conditions for its subjects, but without success.

The term fixed in Germany for working a patent is three years, and even after that, the law says, the patent may be declared void only when it is shown that the patentee has neglected to do what was reasonably necessary for establishing the manufacture of the patented article in Germany, and that he has failed to comply with an eventual public demand for the same.

The United States patent law containing no restrictions whatever as to the working of patents, the Austrian who procures a United States patent enjoys far more privileges than the American owner of an Austrian patent.

JULIUS GOLDSCHMIDT,
Consul-General.

UNITED STATES CONSULATE-GENERAL,
Vienna, April 23, 1892.

AUSTRO-GERMAN TREATY OF DECEMBER 6, 1891.

[Inclosure in Consul-General Goldschmidt's report.—Translation.]

ARTICLE 1. The subjects of either one of the contracting parties shall enjoy the same privileges as the own subjects in the territories of the other with regard to the protection of inventions, of designs (inclusive of the "practical-use" designs) and models, of trade and manufacturing marks of firms and individuals.

ART. 2. Equal to subjects in the sense of this treaty are other persons who have their residence or their principal place of business in the territories of one of the contracting parties.

ART. 3. If application is made for obtaining protection for an invention, a design or a model, a trade or manufacturing mark, in the territories of one of the contracting parties, and if the application is also effected within a term of three months in the territories of the other contracting party, then shall (*a*) this later application precede all applications which have been filed in the territories of the other party after the date of the first application; (*b*) the novelty not be denied to the object of the application in the territories of the other party by circumstances arising after the date of the first application..

ART. 4. The term provided in article 3 begins: (*a*) With designs and models, as well as trade and manufacturing marks, at the time at which the first application is effected; (*b*) with inventions, at the time at which the patent has been granted for the first application; (*c*) with objects which are applied for in Germany as practical-use designs, in Austria-Hungary as inventions, at the time of the first application if this takes place in Germany and at the time at which the patent is granted for the first application if this takes place in Austria-Hungary.

The day of the application or of the granting is not counted in the term, as the day of granting is considered that day on which the decision about the definite granting of the patent has been delivered.

ART. 5. The importation of goods manufactured in the territories of the one party into the territories of the other party shall not cause the loss of a protective right granted upon the goods by reason of an invention, a design, or a model in the territories of the latter party.

ART. 6. The registration of a trade or manufacturing mark registered in the territories of the one party can not be refused to the proprietor in the territories of the other party on the grounds that the mark does not correspond to the regulations in force there for the composition and external form of trade-marks.

Those regulations are not counted among the regulations for the composition and external form of trade-marks which forbid in the trade-marks the employment of likenesses of the sovereign of the country or of the members of the family of the sovereign or of State and other public arms.

ART. 7. Trade and manufacturing marks enjoying protection in the territories of the one party as marks of goods of members of a certain industrial corporation, of a certain place or district, are here excluded from the employment as free trade-marks, in so far as the application for these marks has taken place in the territories of the other party before the 1st of October, 1875.

Besides the members of such corporation, place, or district, nobody has a right to claim the protection of these marks.

Trade-marks containing public arms of the territories of the one party are excluded from the use as free trade-marks in the territories of the other party. Besides the person who has the permission to use the arms nobody has a right to claim the protection of these marks.

ART. 8. Each of the contracting parties shall, in so far as this has not been done already, take measures against the sale and offering for sale of such goods which, for the purpose of deception in trade and commerce, are provided with arms of State of the other party or with names or arms of certain places or districts situated in the territories of the other party as indicative of their origin.

ART. 9. Designs and models, as well as trade and manufacturing marks, for which German subjects desire to secure protection in the Austro-Hungarian Monarchy are to be registered as well at the chamber of trade and commerce at Vienna for the kingdoms and countries represented in Parliament, as also at the chamber of trade and commerce at Buda-Pesth for the countries of the Hungarian Crown.

ART. 10. The present treaty enters into force on February 1, 1892, and remains in force until the expiration of six months after notice has been given by one of the contracting parties.

The treaty shall be ratified and the ratification exchanged as soon as possible at Vienna.

FOREIGN TRADE OF CHINA.

REPORT BY MINISTER DENBY, OF PEKING.

The total value of the foreign trade in 1890 was 214,000,000 Haikwan taels,* and in 1891 it was 234,000,000 Haikwan taels, being the highest total ever recorded.

The customs revenue increased 350,129 Haikwan taels in 1891 over that of 1890, being 23,518,021 Haikwan taels. The increase is contributed by imports, exports, coast-trade traffic, and opium. Transit dues have declined, owing to the opening of Shun-King, which enabled goods to reach Se-Chuen without paying transit dues at Hankow and Ichang.

IMPORTS.

The total value of imports in 1891 was 134,003,863 Haikwan taels, as against 127,093,481 Haikwan taels in 1890. Goods carried coastwise are not included, nor are those carried in junks. Importations of American drills show an excess over 1890 of 263,000 pieces, and American sheetings of 807,000 pieces, 2,008,000 of the latter having arrived, being the greatest quantity on record. The yarn trade shows an immense increase. Kerosene oil has risen from 8,256,000 gallons in 1882 to 49,348,000 gallons in 1891.

*There are various taels in China of varying value. The customs or Haikwan tael is of the highest value. During 1891 its average value was $1.30 in American gold.

In 1891, 39,348,477 gallons of American oil were imported and 10,000,902 gallons of Russian.

EXPORTS.

The total value of exports in 1891 was 100,947,000 Haikwan taels, which is the highest point ever reached, and shows an advance over the figures of 1890 of 13,800,000 Haikwan taels. The three great staples were tea, silk, and cotton. Tea showed an advance of 84,638 piculs* over 1890.

TRANSIT PASSES.

The use of transit passes largely increased. In 1882 the number of inward passes was 91,510; in 1891, 186,779.

TRADE DISTRIBUTION.

The imports and exports of Great Britain were 43,399,934 Haikwan taels; Hongkong, 105,863,620 Haikwan taels; Europe (Russia excepted), 19,280,914 Haikwan taels; Russia, 6,661,237 Haikwan taels by sea and 4,433,807 Haikwan taels by Siberia; Japan, 11,506,070 Haikwan taels; United States, 16,765,382 Haikwan taels.

SHIPPING.

Of vessels entered and cleared in 1891 the representation of the most important countries was as follows:

Country.	Number.	Tons.
United States	113	67,095
Austria	454	457,250
Great Britain	17,718	17,438,995
Germany	2,520	1,911,897
France	172	264,660

CHARLES DENBY,
Minister.

UNITED STATES LEGATION,
Peking, April 2, 1892.

AFFAIRS IN TUXPAN.

REPORT BY CONSUL DRAYTON.

In this report of the second quarter ended June 30, 1892, I have to state that the exports from this point still seem to be declining. The decline has been steadily going on during the last fiscal year.

The exports for the present (June) quarter amounted to $182,382.30, showing a decline of $114,129.14 as compared with the preceding quarter.

Lately business seems to have revived a little, which has induced several vessels from the Gulf coast to renew the lumber trade, which appeared to

* The picul is equivalent to 133⅓ pounds.

have been completely lost; but remunerative prices have brought about a change, and they seem to be making regular trips.

A new line of steamers, called the Mexican International line, English owners, has made its appearance during this quarter, running along the Mexican coast and terminating at Philadelphia. I understand that their freight charges have been reduced so as to induce trade by that line.

I have had several inquiries and applications about the air motor and have written to the manufacturers in Chicago to send one to me as a sample to be erected, as these people need ocular demonstrations to convince them of facts. In all probability numbers of them can be sold.

Exchange continues between 40 and 45 per cent, and is transacted by merchants doing business with New York.

JOHN DRAYTON,
Consul.

UNITED STATES CONSULATE,
Tuxpan, July 12, 1892.

TIN TRADE OF SINGAPORE.

REPORT BY CONSUL WILDMAN.

The quantity of tin exported from the Straits Settlements for the year 1891 was greater than it has been for ten years, and is probably the largest export in the history of the trade. As the Straits Settlements mine half the tin of the world, the following table of exports is worthy of notice:

Year.	Quantity.	
	Piculs.	*Tons.*
1887	462,828	27,549
1888	490,032	29,169
1889	554,747	32,021
1890	537,190	31,976
1891	605,829	36,061

In my report on tin to the Department for 1890 I predicted that the export of tin to the United States from the Straits Settlements would show an increase both in quantity and price for 1891 over that year, owing to the McKinley bill. My prediction has come true. The export to the United States for 1891 was 163,647 piculs (1 picul=133⅓ pounds); for 1890, 118,243 piculs; a gain in quantity of 45,404 piculs and in price from about $32 to $39 per picul. The export figures are according to the colonial trade return, and only represent the so-called direct trade with the United States; but I estimate that a third more in quantity of tin goes to the United States via Hongkong and London, which is set down to the credit of those ports, but which is on its way or is ultimately sold to the United States.

A list of the leading tin-buying countries from the Straits Settlements shows the following shipments:

Countries.	1890.	1891.
	Piculs.	*Piculs.*
United Kingdom	267,238	293,024
Austria	5,295	4,035
France	40,935	45,446
Germany	2,108	2,532
Holland	14,304	18,355
Italy	3,698	6,676
United States	118,243	163,647
Other countries	85,375	72,114

All this great tin trade, which is increasing year by year, is handled by English, German, and Chinese firms, not one American firm or buyer being here or one ounce of tin going in American bottoms.

ROUSEVELLE WILDMAN,
Consul.

UNITED STATES CONSULATE,
Singapore, April 27, 1892.

EGYPTIAN COTTON-CROP REPORT.

REPORT BY ACTING CONSUL-GENERAL GRANT, OF CAIRO.

I have the honor to transmit the résumé of crop reports received by the Alexandria General Produce Association relating to the condition of the growing cotton throughout Egypt. This résumé covers the answers received from the different districts during the month of June.

We have at last had during the whole of the month very hot weather, and the cotton plants have profited well by it, especially in the southern provinces, where they have regained the backwardness noted in previous résumés, and now present an appearance almost as vigorous as that of last year at the same period.

The effect of the favorable temperature has been rather less apparent in the northern portion of Lower Egypt. Nevertheless the fields are in good condition, though not so forward as in 1891.

The water up to the present, with the exception of the Fayoom, where there are some complaints, has happily been sufficient, in spite of the low level of the Nile.

As usual, the cotton worms have made their appearance in June. They are reported from nearly all parts of Lower Egypt. They have, however, been destroyed by the heat, and also by the precaution taken by many cultivators of picking off the leaves bearing the eggs and caterpillars. No appreciable damage by them has been reported up to the present. Upper Egypt and the Fayoom still continue free from the attacks of those insects.

LOUIS B. GRANT,
Acting Consul-General.

UNITED STATES CONSULATE-GENERAL,
Cairo, July 8, 1892.

COAL MINES OF VANCOUVER ISLAND.

REPORT BY CONSUL MYERS, OF VICTORIA.

One of the principal products of British Columbia is coal. It amounted, in fact, to nearly two-fifths of the value of the entire exports of the province for the years 1888, 1889, 1890, and 1891, to say nothing of the amount consumed at home.

Coal has been found in many parts of the province. In the vicinity of New Westminister and along the Thompson and Skeena rivers veins of lignite exist, bituminous coal is found near Kamloops, and a large body of semianthracite of good quality is being developed at the Crow's Nest, in East Kootenay district. At Graham Island, one of the Queen Charlotte group, local volcanic action has created a cretaceous lignite into a compact and brilliant anthracite. On another part of this island is a fine bituminous coal which partakes of the nature of cannel coal. Several companies of American and Victorian capitalists are interested in the Graham Island mines. The above-named fields are just being developed, and as yet are not of much importance in the products of the province.

It is on Vancouver Island that coal-mining, though comparatively in its infancy, has been brought to a point of development where large profits are realized. The coal fields of this island seem to be of unlimited extent, new discoveries being made every year. The fields now being worked are all on the east coast along the strait of Georgia, but it is thought valuable mines will yet be found in the central portion and on the west coast. A series of explorations by a Seattle syndicate, headed by Gen. Lyman Banks, were made last summer on Quatsenough Sound, near the north end of the island, but coal was not discovered in measures worth working.

DISCOVERY.

Coal was first discovered on the island in 1835. The *Beaver*, the pioneer steamship of the Pacific coast, used coal found in outcroppings along the beach. The first attempt at mining was made in 1851 by the Hudson's Bay Company at Fort Rupert, near the northern end of the island. After futile efforts, these mines were abandoned, owing to the brokenness of the measures and the distance from Victoria, the market of supplies. In 1852, a short time before the discontinuance of Fort Rupert mines, coal was discovered by an Indian, known as "King Cole," on the site of the present city of Nanaimo, and the Hudson's Bay Company began operations there in 1853. At the present time the city of Nanaimo is headquarters for the coal trade of the island.

FIELDS AND QUALITY OF COAL.

There are four large collieries in operation on the island. The Nanaimo, Wellington, and East Wellington collieries are all in what is known as the

Nanaimo coal district, which is estimated to have an area of some 200 square miles. The Union colliery, 60 miles to the north, is the first to be opened in the Comox coal district, which has been estimated to have an area of at least 300 square miles. Experts and coal men generally are of the opinion that this district will exceed that of Nanaimo in point of output.

The veins of coal in these districts generally lie horizontally, and vary in thickness from 2½ to 11 feet. The various mines are in most cases worked by vertical shafts from 200 to 690 feet in depth. The shafts are somewhat deeper than in coal mines in the United States, but are shallow compared to the British mines, where the shafts are often 2,000 feet deep.

The class of coal mined is semibituminous, of the cretaceous age. It is of fine quality and has the appearance of some varieties of bituminous coal. It has higher heating power and bears transportation and exposure better than most of the coals found west of the Rocky Mountains. An analysis of coal taken from two of the principal mines is as follows:

Description.	Nanaimo.	Wellington.
	Per cent.	*Per cent.*
Water	4.6	4
Volatile matter	33.7	32.6
Carbon	54.7	54.6
Ash	7	8.8
Total	100	100
Coke	62.2	60.3

NANAIMO COLLIERY.

This colliery is located at Nanaimo, some 75 miles north of Victoria, and was first owned by the Hudson's Bay Company. Its development was begun in 1863. In 1862 the Hudson's Bay Company sold its interest to a syndicate of British capitalists known as the New Vancouver Coal and Land Company. For several years following, owing to natural "faults" in the subterranean strata and other causes, results were discouraging, so that the output between 1862 and 1883 only amounted to between 20,000 and 90,000 tons per annum. In 1884 the company was reorganized, and the output had risen in 1891 to 527,457 tons.

The company has at present five mines, four of which have been in active operation since 1884. Shaft No. 1, or the "Esplanade," is on the beach at Nanaimo. Shaft No. 3 is 1 mile south, and the Southfield shafts 3 miles further south of No. 3. The Northfield shaft is 4½ miles north of shaft No. 1 and is near Departure Bay.

Shafts Nos. 1 and 3 and the Southfield shafts are all on the same vein, although the quality of coal differs. No. 1 produces an excellent gas coal, and it is estimated will produce 11,000 feet of gas to the ton. The Southfield shafts furnish coal better adapted to steam purposes. The Northfield

shaft produces a "Wellington" coal, being somewhat harder than the others. The trend of the veins is almost on a level with the surface, rising to the west and dipping to the east at an angle of 5°.

Shaft No. 1 is run to a depth of 620 feet through a hard conglomerate rock, and is tunneled out under the bay to a distance of over 3,000 yards. A shaft 670 feet deep has been sunk on Protection Island, in Nanaimo harbor, to connect with this mine. From this new shaft the mines will be continued out to sea under the strait of Georgia. In ten years it is thought they will be out 3 or 4 miles under the strait and still making seaward. This mine at present has over 10 miles of drift passages and slopes connected with its foot. The veins of coal in this mine average 7½ feet in thickness.

Shaft No. 3 is about worked out.

The Southfield mine is the greatest producer in the district. One slope is down 800 yards and one shaft 508 feet. The veins average from 6 to 10 feet in thickness.

The Northfield mine has two shafts, and a third will be added shortly, which will about double its output.

The present daily production of the mines is as follows: Shaft No. 1, 600 tons; shaft No. 3, 300 tons; Southfield, 800 tons; Northfield, 500 tons; total, 2,200 tons. Three of the mines are worked on the pillar-and-stall system and one on the long-wall system. All the mines have double shafts for ventilation and are almost totally free from gas.

Most of the property intervening is owned by the company, whose landed mineral estate exceeds 30,000 acres and includes part of the city of Nanaimo, together with Newcastle, Protection, and three or four islands lying adjacent to the coast. This company was the first to introduce the diamond-boring appliances on the Pacific. It has put down altogether 23,000 feet of bore holes.

WELLINGTON COLLIERY.

In 1869, the late Hon. Robert Dunsmuir, of Victoria, discovered croppings of coal at Wellington, 6 miles north of Nanaimo. He sunk a shaft, but missed the seam, subsequently finding it under the roots of a gigantic tree that had been blown down in the dense forest at the present site of Shaft No. 4. The coal discovered proved to be the best yet found on the Pacific coast, and revolutionized the fuel business. Admiral Farquhar, at that time in command of the British North Pacific naval station at Esquimalt, and Capt. Edgarton and Lieut. Diggle, both of the British navy, entered into a partnership with Mr. Dunsmuir in the mine. Its development was pushed, and it became a paying investment from the start. In 1878 Mr. Dunsmuir purchased Admiral Farquhar's and Capt. Edgarton's interests, and in 1883 bought Lieut. Diggle's interest, paying him $750,000 on an original investment of a few thousand dollars. The Wellington colliery is still owned by the Dunsmuir estate.

The colliery is at present being actively worked, there being no diminution in the demand for Wellington coal, and the output is governed only by he facilities for transportation.

The first Wellington mine was a slope, and was worked out in a few years. At present there are four shafts worked from 310 to 375 feet in depth. The rock bored through consists of conglomerates, sandstones, and shales. The coal veins are from 2½ to 10 feet thick, and the coal is harder than that produced at the Nanaimo colliery. The pillar-and-stall and long-wall systems are used in these mines, but modern mining and hauling machinery are being substituted as fast as possible.

The output of the colliery averages 1,450 tons per day. Shaft No. 4 produces 550 tons, and is worked over a considerable area, the height of the seam being 7 feet. Shaft No. 5 produces 450 tons per day, and is worked over an area of 2 miles. Shaft No. 6 produces 450 tons per day, and is being rapidly developed in all directions. In anticipation it is to be the chief shaft of the district. The fourth shaft is being sunk between Departure Bay and Wellington, where there is known to be a large seam of coal.

EAST WELLINGTON COLLIERY.

This colliery is located at East Wellington, 4½ miles north of Nanaimo, and is the property of the East Wellington Coal Company, of San Francisco. The first coal was taken out in 1881. The field is not a large one, but a fine quality of coal is produced, and the future prospects of the company are bright.

The colliery produces some 110 tons a day. The coal veins are from 2 to 5 feet thick. There are two shafts, each about 200 feet deep, in operation. The mines are worked upon a modern basis, and are paying handsomely and supporting a considerable population at that point.

UNION COLLIERY.

The Union Colliery is located about 60 miles northwest of Nanaimo and 11 miles inland from the town of Union, which is on Union Bay, Bayne Sound. Its development began in 1888. A standard-gauge railway connects the mines with the town and transfers the coal to the wharfs.

The colliery is the property of the Union Colliery Company, of which Messrs. Dunsmuir, of Victoria, owns one-half of the stock and Messrs. Leland Stanford, C. P. Huntington, and Charles Crocker, of California, the remaining half.

The Southern Pacific Railway Company has the contract for all the coal the mines can produce. The quality of the coal mined is excellent, and an engineer of one of the largest steamships plying on the Pacific coast has stated that it gave better results than any other used on the coast.

Owing to the location of the veins, the mines are worked by slopes and tunnels, and not by vertical shafts, as in most of those in the Nanaimo district. Slope No. 4 is the principal mine and is in some 450 yards, the incline at the entrance being 1 to 7, which is nowhere exceeded. The coal produced is unexcelled for coking. The seam is 5 to 8 feet thick. The Jeffrey electric coal-mining machine is used to good advantage in this mine,

and all other appliances used are the best found on the coast. Slope No. 1 is down 700 yards, contains a 4-foot seam, is worked in the old style of mining, and produces 200 tons a day. No. 1 tunnel and No. 3 slope are new mines. The first is producing 60 tons a day. The total capacity of the colliery at present is 700 tons per day.

DEVELOPMENT.

The development of these collieries for the past ten years, and especially during the last year, has been rapid. The following table shows the total output of each year from 1874 to 1891, inclusive:

Year.	Output.	Year.	Output.
	Tons.		*Tons.*
1874	81,000	1883	213,000
1875	110,000	1884	394,070
1876	139,000	1885	365,000
1877	154,000	1886	326,636
1878	171,000	1887	413,360
1879	241,000	1888	489,300
1880	268,000	1889	579,830
1881	228,000	1890	678,140
1882	282,000	1891	1,029,097

The output of the different collieries for the years 1888–'91 was as follows:

Collieries.	1888.	1889.	1890.	1891.
	Tons.	*Tons.*	*Tons.*	*Tons.*
Nanaimo	258,817	223,870	389,505	527,457
Wellington	198,392	273,383	174,496	345,182
East Wellington	30,092	51,372	44,602	41,666
Union	2,000	31,204	69,537	114,792
Total	489,301	579,830	678,140	1,029,097

The output of the Wellington Colliery for 1890 would have been much larger had not the miners employed therein inaugurated a strike in May, which continued during the entire summer. The Union Colliery shows a remarkable development. The total output of the collieries for 1891 shows an increase over that of 1890 of 350,957 tons.

MARKET AND PRICES.

Soon after coal began to be mined on the island it was found that the best market for it was at San Francisco and other ports in California, and the demand for Vancouver Island coal in that market is now as great as then. The principal competition comes from the Puget Sound mines. The following table (from an authentic commercial source) shows the total amount of coal consumed in California for the years 1888–'91.

Table showing the amount of coal consumed in California in the years 1888–'91.

Sources of supply.	1888.	1889.	1890.	1891.
	Tons.	*Tons.*	*Tons.*	*Tons.*
British Columbia	345,681	417,904	350,388	517,477
Australia	271,612	408,032	153,920	275,490
England and Wales	126,167	32,890	53,374	200,777
Scotland	10,680	12,727	1,490	34,225
United States (Eastern States)	30,118	18,950	32,701	42,237
Puget Sound	568,948	372,514	450,762	393,163
Coos Bay and Mount Diablo (Oregon)	81,194	87,600	74,210	90,684
Japan	13,808	1,340	13,250	20,506
Carmel Bay (Oregon)	.....	.....	.....	1,200
Alaska	.....	.....	.....	150
Total at San Francisco	1,448,208	1,351,957	1,130,095	1,575,909
At lower ports (Wilmington, San Pedro, and San Diego)	211,598	11,805	123,312	160,820
Grand total	1,659,806	1,363,762	1,253,407	1,736,729

In addition to the 517,477 tons from British Columbia there was exported to and delivered at the lower ports from this province 123,534 tons, which amount is included in the 160,820 tons noted as delivered at lower ports in 1891. This makes the total export of coal to California from Vancouver Island 641,011 tons for last year.

By a perusal of the above table it will readily be seen that the island mines are holding their own and even gaining in this principal market, and the mine managers assert that, if it were not for the 75 cents per ton duty prescribed by the United States tariff, they would close every mine in the State of Washington within a short period and completely monopolize the Pacific coast markets. Besides being discriminated against by the tariff, the freight on island coal averages 25 cents more per ton than the Puget Sound article, and it is only the extra fine quality of the island coal that makes a demand for it.

There has been a sharp competition in the California market for several years past, and the provincial inspector of mines, in his report for the past year, thinks the excessive shipments of coal from all countries to that State has disturbed the balance of supply and demand to such an extent that the output of the island collieries for this year (1892) may not greatly exceed that of the past year, and he recommends a treaty of reciprocity in coal between Canada and the United States to remedy this state of affairs.

Besides supplying the California market, Arizona, New Mexico, Oregon, and even the Puget Sound cities use some island coal. The Hawaiian Islands, Mexico, China, and Japan are also consumers on a small scale. The Southern Pacific Railway Company uses island coal in part, as does the Canadian Pacific Railway Company, and also the steamers of the Canadian Pacific Navigation Company. British and American men-of-war have been frequently coaled at the collieries for several years past, and ocean mail steamers and other steam vessels calling for fuel have been supplied. The amount of coal consumed in British Columbia in 1890 was 169,870 tons;

in 1891, 202,697 tons. These amounts include the coal consumed by the collieries.

The following table shows the amount of coal exported and its destination for the fiscal years 1886–'90, as shown by the Dominion reports of trade and navigation for those years:

Countries.	1886.	1887.	1888.	1889.	1890.
	Tons.	*Tons.*	*Tons.*	*Tons.*	*Tons.*
United States	253,889	315,380	333,788	444,930	494,301
Japan	.....	1,500	7,300	1,000	1,800
Hawaiian Islands	2,857	.....	2,240	4,345	2,578
Mexico	500	.....	3,020	2,350	.....
China	.....	250	3,700	.....	1,855
Great Britain	25	.....	.....	.....	.....
Siberia	1,400	.....	.....	.....	.....
Total	258,671	317,130	350,048	452,625	500,564

Island coal sells at San Francisco at from $6 to $9 per ton, according to quality and the cost of transportation. Some grades of island coal sell in southern California for $6.50 and on Puget Sound from $6.50 to $7. The retail price of coal in the cities of Victoria and Vancouver is $7 to $8 per ton. Vessels coaling at Departure Bay and at Nanaimo can purchase it for $3 to $4 per ton and at Union for $2.75 to $3 per ton. At Departure Bay coal is delivered aboard the colliers for outside parties and foreign buyers for $3 per ton. Freights from Departure Bay and Nanaimo to San Francisco and southern California average $2.25 per ton.

TRANSPORTATION.

The New Vancouver Coal Company (Nanaimo Colliery) ships from both Nanaimo and Departure Bay.

R. Dunsmuir & Sons (Wellington Colliery) and the East Wellington Coal Company both ship from Departure Bay.

The Union Colliery Company ships from Union.

Most of the output of the Nanaimo Colliery goes to San Francisco. It is carried there in American bottoms principally. The harbor of Nanaimo is never deserted, and generally three or four vessels may be seen there loading coal. The coal company has over 160,000 tons of shipping under contract, not counting other vessels chartered by outside buyers. Last year a fleet of one hundred and seventy steamers and sailing vessels, with an average carrying capacity of 1,600 tons each, were employed by this company in carrying coal. The employment of American vessels in this trade has caused the port of Nanaimo to rank third in the Dominion of Canada for the amount of American tonnage arriving and departing. The company expects to further increase its fleet by the addition of several large steam colliers, the first of which is expected from Liverpool soon. Its shipping wharfs at Nanaimo have a frontage of 1,070 feet.

The Wellington Colliery has three large shipping wharfs at Departure Bay, at which some of the largest ocean vessels are loaded and dispatched. The British steam colliers *Wellington* and *Costa Rica*, having a carrying capacity of 2,600 and 2,500 tons, respectively, are owned by the Dunsmuirs, and are engaged in carrying coal to San Francisco. A number of American sailing vessels are also in their employ. Outside parties purchasing Wellington coal send their own vessels to load at Departure Bay.

The East Wellington Colliery ships all its coal to San Francisco in American sailing vessels. They are loaded at its wharfs at Departure Bay.

The output of the Union Colliery is transported to California by three steam colliers flying the American flag. They are the *San Pedro*, *San Mateo*, and the *San Benito*, and are owned by the Pacific Improvement Company, of California. These vessels are large and powerful and have a carrying capacity of over 3,000 tons of coal each.

Besides the American and British vessels employed as colliers, a number of Norwegian vessels are also in the trade. The famous American "whaleback" steamer *Charles H. Wetmore* is now carrying coal for the Nanaimo Colliery, and she seems well adapted for the business, owing to the ease of loading and discharging the cargo. At Nanaimo recently 2,500 tons of coal were put aboard of her in twenty-four hours.

The sailing vessels employed have to be towed, as a general rule, from Cape Flattery to Nanaimo and Departure Bay, a distance of about 150 miles, and after being loaded are towed back to Cape Flattery. American tugs do most of this towing.

MINERS AND WAGES.

The several collieries furnish employment to almost 3,200 miners, engineers, longshoremen, etc. The nationalities represented among the miners are English, Scotch, Swedes, Finns, Italians, Belgians, Americans, Chinese, and Japanese.

Table showing the number of employés.

Collieries.	Whites.	Boys.	Chinese.	Japanese.	Total.
Nanaimo	1,331	46	87	.....	1,464
Wellington	824	33	100	.....	957
East Wellington	156	9	23	.....	188
Union	270	15	200	100	585
Total	2,581	103	410	100	3,194

Table showing the wages of the employés.

Collieries.	Whites.	Boys.	Chinese.	Japanese.	Miners' earnings per day.
Nanaimo	$2.50 to $3.50	$1.00 to $2.00	$1.00 to $1.25	.....	$3.00 to $5.00
Wellington	2.50 to 3.50	1.00 to 2.00	1.00 to 1.50	.....	3.00 to 4.50
East Wellington	2.50 to 3.50	1.00 to 2.00	1.00 to 1.50	.....	3.00
Union	2.50 to 3.50	1.00	1.00 to 1.25	$1.00 to $1.25	3.00 to 4.50

In the Nanaimo, Wellington, and East Wellington collieries white men are employed as miners, and the Chinese, together with whites, do the work above ground. At the Union Colliery both Chinese and Japanese are to some extent employed both as miners and above ground.

The miners have an organization known as the "Miners' and Mine Laborers' Protective Union," which has a large membership. The Nanaimo Colliery employs only members of this union. The Wellington and East Wellington collieries employ both union and nonunion men. Eight hours constitute a day's work in all the mines.

After many years of agitation the provincial parliament in 1890 passed an act prohibiting Chinese labor in the mines, but in 1891 the act was repealed.

MINE REGULATIONS.

The following are the principal points of the provincial act regulating coal mines:

Each mine is under the supervision of a certified manager, who gets his authority after an examination from the minister of mines. Inspectors are also appointed by the minister of mines. Their duty is to examine into the state of the mines from time to time. Certified managers make reports to the inspectors. No person, either male or female, under 12 years of age is allowed to work in the mines or above ground. Boys between 12 and 14 are allowed to work, by option of the minister of mines, in mines where the seams are thin, but must not work more than six hours each day. No boy under 18 years old is allowed to operate any engine, windlass, or gin, but a boy over 12 may drive any animal operating the same. Wages are paid by the weight of the coal, deducting rocks and débris. Single shafts are prohibited. Mines must have at least two shafts or outlets separated by not less than 10 feet of natural strata. Not less than 100 cubic feet of pure air per minute must be supplied for each person and animal employed in the mine. Each mine is required to be divided into districts of 70 men each, and each district must have a separate current of air. Mines are to be inspected as to ventilation once a day. Mines having had inflammable gas within twelve months are to be inspected at least once a day, and all miners are to be promptly withdrawn in case of danger. The regulations as to safety lamps and lights and the use of explosives are very strict. Each mine is to have special rules, which, under its peculiar state and circumstances, appear best calculated to prevent accidents. Old shafts or shafts not in use are to be fenced.

LEVI W. MYERS,
Consul.

UNITED STATES CONSULATE,
Victoria, May 11, 1892.

STOVES IN AUSTRIA.

REPORT BY CONSUL-GENERAL GOLDSCHMIDT, OF VIENNA.

Almost all the dealers in this city confine their business to porcelain and terra cotta or clay stoves. Iron stoves are used but very little either for cooking or heating purposes. The parlor, dining, and sitting room stoves are mostly very elaborate and sometimes highly artistic ornaments. The grate and fireplace are very small in comparison to the size of the stove, and it is necessary to light a new fire every morning. Fires are never kept over night. The construction of the stoves, as well as the saving propensities of the people, are the causes of this, and I presume the very inferior quality of the coal, which is only of a semihard quality, a little harder than our soft coal, makes the keeping of a fire over night almost impossible.

The Austrians are a very conservative people, and somehow a very strong prejudice exists here against everything American, which has its cause in the great fear of American competition and success in all branches of industry. Our American base-burner found a ready market in Germany for several years and had also been successfully introduced into Austria, and these and other countries of Europe might have become an important market for these goods in course of time if the manufacturers had had the forethought to protect their patents and trade-marks by taking out patents and registering their trade-marks in European countries to prevent the imitation of their products, which were at once imitated by numerous unscrupulous manufacturers in Germany. These poor German goods now take the place of the good United States base-heater, and our young export business is nipped in the bud.

The American inventive genius, fostered by the liberal patent law of the United States, has long become proverbial all over Europe, and American inventions are generally sought after and universally employed. In the most secluded villages of the remote European provinces the traveler will find American tools and implements, but in many cases only the invention is American, while the article itself is an imitation produced by enterprising European manufacturers, who sometimes not only copy the article, but also take out a patent for it, which, as long as it is not disputed, must be considered as valid by others. The American inventor or originator does not derive any profit from this trade, for the sole reason that he neglected to patent his article abroad.

The few base-burners which are sold here come from Germany, and the dealer, Otto C. Pellikan, 11 Prater Strasse 78, Vienna, assures me that he buys the Crown Jewel stoves, which he advertises as American base-burners manufactured in Detroit, Mich., at Nuremberg and other places in Germany at a price almost 40 per cent less than the American-made stove could be laid down here for, but that his trade in American base-burners was rather limited. Parties who bought these goods, he said, had been com-

plaining of the great heat generated by these stoves. This climate requires only a moderate heat; the thick walls of the dwellings, the double windows, and the fashion of placing a long cushion in every window to keep out the air, I presume, must also be taken into consideration in deciding on the most appropriate form and capacity of the heating stove.

Mr. Hardtmuth, a manufacturer here of porcelain stoves, will exhibit his goods at the World's Columbian Exposition in Chicago, and is willing to establish a stove foundry in our country for the manufacture of all kinds of stoves, fireplaces, and open hearths in porcelain, terra cotta, or faïence if he will meet with the proper encouragement. At all events, it will be worth the trouble and it may be in the interest of our home industry to further investigate this matter. It seems certain that the American cast-iron base-burner of old can not be exported to Europe any more with profit, and there may be a chance to build up a new industry in the direction of clay stoves, which may be so improved and changed as to make them fill a want in our country.

JULIUS GOLDSCHMIDT,
Consul-General.

UNITED STATES CONSULATE-GENERAL,
Vienna, May 17, 1892.

THE GERMAN HOP CROP OF 1892.

REPORT BY CONSUL-GENERAL MASON, OF FRANKFORT.

In compliance with instructions from the Department, I have the honor to submit the following statement of the present condition of the growing hop vines in Germany and the outlook for the product of this year:

The area of culture can not be precisely stated until the statistics are collated at the close of the season; but unofficial estimates agree that there has been in Bavaria and some other provinces a slight increase—not more than 5 per cent—in the acreage devoted to hops as compared with that of last year, when the whole area under such cultivation in Germany was 109,825 acres. As the newly planted vines do not bear during the first year, the small increase in acreage above noted will not affect the productive area for 1892, which may be set down about the same as that of last year, against 113,115 acres in 1889. It has been stated in a previous report of this series that hop-raising in Germany, although highly profitable in some seasons, is at other times, by reason of overproduction and other contingencies affecting the market, uncertain and often disappointing; so that the Government does not encourage, but rather discourages, any important increase in the acreage of hop culture, which varies but slightly from year to year.

It is asserted by hop-growers that the weather of July and August decides the quantity of each year's product, while that of September determines its quality. It is therefore too early for any definite prediction of the quality of this season's crop, but its quantity may be approximately estimated. In

Prussia, where the standard average yield is 478 kilograms per hectare, the official report of August 12 estimates the crop of this season at 78 per cent of a full crop, or about 387 pounds per acre. This would be a deficit of 22 per cent below a normal crop, which, if it extended throughout the whole hop-growing territory of the Empire, would create a deficiency which, in presence of the already short supply in most markets, would revolutionize the trade. But there is abundant evidence that, unless the coming six weeks bring extremely unfavorable weather or some unexpected blight or insect pest, the hop harvest in the South German provinces—Bavaria, Baden, and Würtemberg—will bring the aggregate yield of Germany up to nearly or quite the average figure.

In 1890 Bavaria alone produced 28,439,000 pounds of hops, about half the entire product of the Empire. The average yield there in a good year is 500 kilograms per hectare (equal to 445 pounds per acre). In Würtemberg and Baden the conditions of soil, climate, and culture are practically similar to those in Bavaria, although hop-growing in the two former states is relatively less general and important than in the latter. But, as these three southern states collectively decide the character and quantity of the German hop crop from year to year, we may safely accept the present condition of the vines there as a key to the product of the current season. A somewhat careful study of recent local reports from about sixty different points in upper and lower Bavaria, Würtemberg, and the Palatinate shows a uniformly fair promise as to quantity and, unless some misfortune should yet intervene, an excellent prospect as regards quality.

Throughout southern and western Germany June and the first half of July were marked by remarkably bright, dry weather. The soil in much of this region is light and sandy, so that it suffers seriously from any prolonged drought. During the first fortnight of July the lack of sufficient rain had become ominous. The hop vines were of good color, but, owing to lack of adequate moisture, their growth had been checked; so that many vines had not reached the top of the poles at the time of blossoming, and their lateral spread was less rank and vigorous than usual. Just when the danger had become serious local rains fell more or less abundantly in many districts, which, although not sufficient to thoroughly soak the ground or freshen the shrunken streams, went far toward saving the hop vines. The present condition of the vines varies in nearly exact accordance with the amount of this local rainfall, and the reports from the different sections range from 80 per cent to a full crop, with an excess above the average at Rottenburg and a few other specially favored localities. The weather is at present warm and dry, and the early hop harvest will begin as early as the 25th of August.

Messrs. John Barth & Co., of Nuremberg, a high and trustworthy authority, estimate the crop of Bavaria alone this year at 26,800,000 German pounds, against 28,800,000 pounds in 1890 and 22,800,000 pounds in 1891. It is probable that about the same relative proportion with the crops of the two past years will be maintained in Baden and Würtemberg; so that, tak-

ing into account the estimated shortage in Prussia, the total product of Germany will be probably not far from 45,000,000 German pounds, which there is at present every reason to expect will be of uniformly good quality. Deficient or sudden and excessive rains, cold nights, or the black blight may yet impair the quality of the late harvest, but none of these calamities are anticipated.

Thus far there appears to have been very little buying in the principal German hop markets for purposes of speculation. On the 1st of July, when the outlook, by reason of drought, seemed most uncertain, Bavarian baled hops were selling in Nuremberg for 125 marks per 100 kilograms ($29.75 per 220 American pounds), while the best Würtemberg and Baden hops ruled 5 marks higher for the same quantity. These, it may be added, were moderate and ordinary prices for that season of the year.

Great Britain is the great consumer of the surplus hop products, and it is to the English hop fields that experienced dealers are looking most anxiously for the results which will affect most directly and vitally the market for the coming autumn and winter.

FRANK H. MASON,
Consul-General.

UNITED STATES CONSULATE-GENERAL,
Frankfort, August 15, 1892.

FERTILIZERS IN THE WEST INDIES.*

FERTILIZERS IN JAMAICA.

REPORT BY VICE-CONSUL WRIGHT.

For the year ended March 31, 1891, there was imported into this island fertilizers to the value of $13,794.29, of which $11,878.17 in value came from the United Kingdom, $407.57 from the United States, and $1,508.55 from the West Indies; while for the year ended March 31, 1892, the total importations amounted to $19,909.80, distributed as follows: From the United Kingdom, $19,529.84; from the United States, $245.24; and the remainder from the West Indies.

It will be seen from this that, although the use of imported fertilizers is exceedingly small, it is on the increase.

The explanation of the practical monopoly of the United Kingdom in this trade is explained by the fact that the English manufacturers of commercial fertilizers hold themselves in readiness to analyze samples of the soil, in order to arrive at the chemical deficiencies thereof, and then compound the fertilizers to meet such deficiencies. Intelligent and practical users of fertilizers assure me that if American manufacturers will hold out the same inducements in regard to analyzing the soils and manipulating the manure to supply the requirements thereof, and in addition thereto will sell at the

* For the Dutch West Indies the consul at Curaçao merely says: "Fertilizers are not imported here."

same price fertilizers of the same commercial value, the item of freights being so much in favor of the United States, her manufacturers can turn the tide in their favor.

Although the area of Jamaica is only 4,193 square miles, it contains a great diversity of soils, and it would therefore require the honest and intelligent preparation of fertilizers on the part of American manufacturers to obtain and hold this trade. And just here I may remark that the principal crops (cane and bananas) being very exhaustive to the soil, it is a well-recognized fact that in a few years at most fertilizing must be largely resorted to, as the lands are virtually worn out, and the system of the past in turning out old lands and taking in new can no longer be resorted to, as the lands have all been under cultivation, that is, the kind adapted to the crops named, which, as before stated, constitute the principal cultivated crops.

I have been unable to ascertain the chemical value of the fertilizers imported, the quantity, or their selling price.

S. H. WRIGHT,
Vice-Consul.

UNITED STATES CONSULATE,
Kingston, July 23, 1892.

FERTILIZERS IN MARTINIQUE.

REPORT BY CONSUL KEEVIL.

There is annually imported 20,000 to 25,000 tons of nitrates, phosphates, and ammonia. About one-half is in a prepared state, the rest in crude form, which is mixed here by a firm engaged in that business with a capital of 320,000 francs. The firm is entitled Compagnie des Engrais de la Martinique. The factory is in the city of St. Pierre.

The material is all imported from the United Kingdom, and is packed in strong bags or barrels. The finished product is used for sugar cane only. Its analysis is as follows:

Cross's special cane fertilizer—nitrogen, equal to 9 per cent of nonvolatile ammonia, 19 to 20 per cent of soluble phosphates, and 3 to 5 per cent of insoluble phosphates, besides 3 to 4 per cent of soluble salts of potash and alkaline salts.

Cross's early potassic cane fertilizer—nitrogen in various forms equal to 6½ per cent of ammonia; phosphoric acid, soluble, equal to 15 to 16 per cent of phosphate rendered soluble; phosphoric acid, soluble, in finely prepared form, equal to 5 per cent of phosphate of lime; potash equal to 10 per cent of sulphate of potash.

There are no duties on fertilizers, and wharfage is nominal. Small lots of sulphate of ammonia and nitrate of potash have been recently imported from the United States through a commission house.

The price, laid down at Martinique, is about 230 to 235 francs per ton of 2,240 pounds for Cross's and other English manufacturers'.

The quantity used per acre varies. The soil in the uplands being loose and rains frequent, 250 pounds to the acre are used; the lowland being more compact and clayey, 200 pounds to the acre are all that is required. If subsoiling was practiced more by planters, a less quantity would be necessary.

The terms on which the business is carried on are as follows: Drafts of Colonial Bank of London agency at Martinique on New York or London at 5.25 francs to the dollar on delivery.

It would appear that, with cheap material in the United States and the short distance to transport the finished article, the United States should command the market, as we do for yellow-pine lumber, flour, corn, lard, and meat products.

ALFRED B. KEEVIL,
Consul.

UNITED STATES CONSULATE,
St. Pierre, July 28, 1892.

FERTILIZERS IN MATANZAS.

REPORT BY CONSUL CHENEY.

I can not learn that any fertilizers other than those made upon the estates are used, or that any serious attempt has ever been made to introduce fertilizers from abroad. I doubt if they could be used with profit.

ELIAS H. CHENEY,
Consul.

UNITED STATES CONSULATE,
Matanzas, July 15, 1892.

FERTILIZERS IN ST. THOMAS.

REPORT BY CONSUL HORNE.

Replying to circular of June 2, 1892, I beg to say that there is no demand for fertilizers, nor are there any imported to the islands included within my consular jurisdiction.

Mr. Joseph L. Taylor, the consular agent at Santa Cruz, reports that—

Many years ago there was some guano and patent fertilizers imported from England; but of late years, owing to the low price of sugar, the planter has been satisfied if he could provide sufficient manure.

This island is nonproductive, and very little cultivation is carried on in the island of St. John; but there may be a field for trade in fertilizers in the island of Santa Cruz if a proper canvass be made by dealers.

SAML. B. HORNE,
Consul.

UNITED STATES CONSULATE,
St. Thomas, July 9, 1892.

FERTILIZERS IN ST. CHRISTOPHER.

REPORT BY CONSUL PARKER.

During the calendar year 1891 there was imported into the island of St. Christopher from the United Kingdom 187⅓ tons of fertilizers, valued at $11,241.66 (£12 10*s.* per ton of 2,240 pounds); from the United States for the same period, 43⅓ tons, valued at $1,818.74 (£8 10*s.* per ton of 2,000 pounds).

It will be observed from the foregoing statement that the greater part of the commercial fertilizers used on this island are imported from Great Britain for various reasons. The two strongest reasons are the following: First, nearly all the landowners reside in Great Britain and are largely controlled by home influence; second, a few years ago the English fertilizer companies sent out a chemist who analyzed the soil and prepared a special formula of a fertilizer for the sugar-cane plant, which is very popular here and sells at the highest price, $60 per ton.

In referring to prices, the showing is largely in favor of the United States; and the freights from New York to St. Christopher are only one-half of what they are from London. Now, with a little enterprise and industry on the part of fertilizer-manufacturing companies in the United States, they could very soon have all this trade. They must not forget that the island of St. Christopher is apparently one sugar-cane farm. The different estates are not divided by any fences, simply turning rows and ditches.

I have traveled all around the island several times and find little else than sugar-cane plantations, all well cultivated.

These farms require a good sugar-cane fertilizer, and if our manufacturers will send down a chemist, analyze the soil, and prepare as good a fertilizer as the special fertilizer imported from London, they will control this trade, as the freights from New York, as heretofore stated, are only one-half what they are from London.

The freights should be very cheap from Savannah and Key West, as it is only 800 miles from the former and 600 miles from the latter place to this island.

The United States should establish a weekly mail from Key West to these islands. We are here only 600 miles from our own country and can not get a regular mail, owing to the employment of the Quebec line of Canadian vessels hailing from London, which is all the time fighting for freights and is perfectly indifferent about the United States mails. At times (twice) we have had two mails within forty-eight hours, at other times not a mail in a month.

STEPHEN W. PARKER,
Consul.

UNITED STATES CONSULATE,
St. Christopher, July 13, 1892.

FERTILIZERS IN TRINIDAD.

REPORT BY CONSUL PIERCE.

Pursuant to instructions contained in Department circular dated June 2, 1892, calling for a report upon the trade in commercial fertilizers in this consular district, I beg to observe, in respect to the three islands constituting the district, that the only substantial opening for American trade in fertilizers is in the island of Trinidad. The industry of Grenada is principally limited to cacao, and the sugar industry in both Grenada and Tobago is comparatively of not much importance. I have not seen the custom-house returns for Grenada, nor the last return (1891) for Tobago, but in 1890 only £18 6*s.* 8*d.* worth of manure was imported at Tobago. Trinidad, however, imported in 1890 fertilizers (or manures, as is the custom-house designation) to the value of £40,892. The importations last year (1891) were considerably less, being valued at £19,867.

The value of importations for 1890 and 1891 was as follows:

From—	1890.	1891.
United Kingdom	£40,682	£19,135
British West Indies	5	.....
British Guiana	200	8
United States	5	558
France	.....	166
Total	40,892	19,867

While it will be seen that the United States got somewhat of a foothold last year, it is still not fairly in the market. Within the last few months several American manufacturers of fertilizers have made inquiries of this consulate and have otherwise indicated a disposition to extend their trade to Trinidad, and it is reasonable to expect that, within a few years, the above figures will undergo a great change in favor of the United States.

The only crop of Trinidad worthy of consideration in this connection is the sugar-cane crop. Imported manure might be of service in promoting the growth of cacao trees and cocoanut trees, but I have not heard that any has been used for that purpose, except in the way of experimenting.

Probably seven-eighths of the sugar-cane crop of Trinidad belongs to residents of the United Kingdom (who send out the fertilizers to their respective agents), and it is believed a trade in American fertilizers can not be built up here to any considerable extent without consulting them.

The principal sugar-estate owners are as follows: C. Tennant Sons & Co., 9 Mincing Lane, London; Gregor Turnbull & Co., St. Vincent Place, Glasgow, Scotland; W. F. Burnley & Co., Glasgow, Scotland; Colonial Company (limited), London, England; C. D. Kemp Welsh, No. 41 Berners street, London, England; John Cumming, Port-of-Spain, Trinidad; G. F. Fenwick, Port-of-Spain, Trinidad.

As the information called for by the circular admits of quite a variety of facts obtainable only from different persons, and embraces to a more or less extent mere matters of opinion, I drew up a series of questions which I thought covered the subject and requested four trustworthy and competent parties to answer them. I refrain from thanking these gentlemen by name, because their answers reveal their private business; but I am much obliged to them for their assistance.

The questions were as follows:

(1) Name the principal fertilizers in use and the quantity per acre used of each kind.

(2) Give the analysis of each kind of fertilizer.

(3) At what season of the year are fertilizers imported and used on the soil?

(4) Are the fertilizers in use imported in barrels, bags, or in bulk?

(5) What styles of packages are preferred?

(6) Do the merchants pay cash on presentation of drafts with bill of lading or other satisfactory documents attached?

(7) Do the fertilizers go into the hands of the planter from the merchant on credit? If so, how long?

(8) State, as an average, the respective cash prices per ton, say, on landing.

(9) What is the aggregate cost of lighterage and other necessary expenses per ton between the ship's tackle and the warehouse of the merchant?

(10) Any further information pertinent to the subject.

The first set of answers was as follows:

(1) There are many kinds of fertilizers used here, depending much upon the taste or fancy of the planter or proprietor. Perhaps a mixture of sulphate of ammonia and superphosphates or ground mineral phosphates is used as extensively as any other. There is also a large consumption of Peruvian guano and cane manures of various kinds. The quantity per acre depends entirely upon a variety of circumstances, and definite information upon this point could only be obtained from practical planters.

(2) We are only in a position to give you the analysis of Ohlendorff's guano and manures, and these you will find in the pamphlet handed you.*

(3) Fertilizers are generally imported pretty early in the year, and applied chiefly just after crop is finished, say May and June.

(4) The fertilizers in use here are mostly imported in tierces containing about half a ton each, but bags are also imported. They generally weigh from 10 to 14 to the ton.

(5) Tierces are generally preferred.

(6) Manures are frequently imported on long credit, and are also frequently consigned to merchants for sale. In the latter case they sell ex wharf, if possible, on best terms they can make, but as a rule they have to store and sell gradually as opportunity offers.

(7) Partly answered above. Long credit is sometimes given to planters, as manure bought and applied in May or June of one year is really for the benefit of canes to be reaped nine or twelve months later.

(8) The figures referring to our own manures have already been given, and we are not in a position to give any others.

(9) Vessels land cargo on wharf here, they paying lighterage, etc.

(10) There is no other information which occurs to us at the moment.

*There are only two brands described in the pamphlet which have any standing here, to wit, dissolved Peruvian guano and Ohlendorff's special manure. The price of dissolved Peruvian guano at Trinidad is £14 1s. 3d. per ton, and the analysis is as follows: Nonvolatile ammonia, 7 per cent; guano phosphates, 20 per cent soluble and 4 per cent insoluble; potash, 2 per cent. The price at Trinidad of Ohlendorff's special manure is £22 10s., and the following is the analysis: Ammonia, 4 to 4½ per cent; phosphate, 30 to 35 per cent, of which 20 per cent is soluble; potash, 2 per cent.

The following is the second set of answers:

(1) Sulphate of ammonia and superphosphate of lime, used generally one-third and two-thirds. About 1 cwt. per acre on an average.

(2) Can not give analysis.

(3) Imported in April and May and used beginning of the wet season, generally between May and July.

(4) Tierces, puncheons, and bags—largely in bags.

(5) Casks are preferred.

(6) Not purchased here. The manure is shipped from Great Britain for account of the plantations.

(7) Answered by No. 6.

(8) Sulphate of ammonia, about £13 10s. per ton of 2,240 pounds; phosphate of lime, about £4 per ton of 2,240 pounds. Cost of both includes freight and all charges landed here.

(9) Expense of lighterage is included above, and may be taken at 60 cents per ton; no other landing expenses.

The third set of answers is as follows:

(1) Sulphate of ammonia (alone), 2 to 3 cwts. per acre; sulphate of ammonia and superphosphates mixed at the rate of 2 of superphosphates to 1 of ammonia, 4 cwts. per acre; dissolved guano, 3 to 4 cwts. per acre; a mixture of sulphate of ammonia (45 to 50 per cent), muriate of potassium (12 to 15 per cent), and dissolved bones (35 to 43 per cent), 3 to 4 cwts. per acre.

(2) Sulphate of ammonia, 24½ to 25 per cent; superphosphates, 35 to 36 per cent soluble phosphates; dissolved guano, 8 to 9 per cent ammonia, 20 to 22 per cent soluble phosphates, 3 to 4 per cent insoluble, 2 per cent potash; muriate of potassium, 70 to 80 per cent; dissolved bones, 2½ per cent ammonia, 21 per cent soluble phosphates, 10½ per cent insoluble.

(3) In my opinion the best time to apply artificial manures is in April and May, before the wet season sets in.

(4) Superphosphates can be imported in double bags, all the others in tight puncheons.

(5) Tight puncheons preferred. They can be used afterwards for sugar or molasses.

(6) Manures bought in the colony by estates are usually sent to the importing merchant on consignment for sale and returns.

(7) Manures sold in the island are always sold on credit—mostly three months, sometimes six months.

(8) Our manures cost us landed on the estate: Sulphate of ammonia, £12 15s. to £13 per ton (cask included); the mixture (sulphate of ammonia, muriate of potassium, and dissolved bones), £10 10s. per ton (cask included); superphosphates, £4 10s. to £5 (in bags). Dissolved guano, I understand, can be bought in the island at £12 10s. to £13 per ton (in bags).

(10) The great bulk of artificial manures is imported directly from England or Scotland by the the proprietors of estates.

The fourth set of answers was:

(1) Sulphate of ammonia and dissolved guano; 2 cwts. per acre. Backward fields sometimes receive a second application.

(2) Sulphate of ammonia—nitrogen, 20.78 per cent; equal to ammonia, 25.23 per cent; dissolved guano—soluble phosphate, 19.56 per cent; insoluble phosphates, 2.12 per cent; potash, 4.22 per cent; equal to soluble potash, 7.81 per cent; total nitrogen, 7.27 per cent (including nitric nitrogen, 54); equal to ammonia, 8.82 per cent; dissolved guano—moisture, 7.44 per cent; soluble phosphate, 19.06 per cent; insoluble phosphates, 2.39 per cent; potash, 2.23 per cent; equal to sulphate of potash, 4.12 per cent; nitrogen, 7.55 per cent; equal to ammonia, 9.17 per cent.

(3) Early May to June.

(4) Ammonia in casks, say tierces; guano in bags.

(5) As above.

(6) Estate-owners principally reside in Europe and ship the manure direct to their estates or are supplied by merchants here, who sell from consignments held for manufacturers.

(7) Three months' credit.

(9) Lighterage, about 60 cents per ton.

I am advised, in addition to the above sets of answers, that one of the principal nonresident sugar-cane producers sends out from the United Kingdom a fertilizer known as "Turnbull's mixture." This mixture is composed of the following: Sulphate of ammonia, 40 per cent; muriate of potash, 10 per cent; superphosphates, 50 per cent.

The first cost of Turnbull's mixture is £7 15*s.* per ton. Delivered here in steamer's warehouse it costs about £10. It is imported in secondhand sugar casks containing half a ton each.

The largest local planter uses principally a mixture of his own, composed of two-thirds ground phosphate and one-third ammonia. Both ingredients are imported in casks. The first cost (net) of ammonia in London is, say, about £10, and delivered on wharf in Port-of-Spain (Trinidad), say, £12, including freight, casks, lighterage, and all other expenses. The ammonia is guarantied to be 24¾ per cent, which is understood here to be about as pure as is ever manufactured for fertilizing purposes. The ground phosphate costs, net, in London about £1 18*s.* 2*d.*, and delivered here on wharf, including all expenses and charges, say, £3 14*s.*

In conclusion, I beg to observe that there are no tonnage or light-house dues at this port, and all manures are entered free of custom-house duty.

WM. P. PIERCE,

UNITED STATES CONSULATE, *Consul.*

Trinidad, July 25, 1892.

SPANISH WINES.

REPORT BY CONSUL TURNER, OF CADIZ.

I have the honor to inclose herewith a translation of the recent royal decree against the adulteration and falsification of wines and a report on same from Consular Agent Hall, of Jeres de la Frontera.

That all the sherry wines produced in this consular district have been worthy of being above the suspicion of adulteration, as stated by Mr. Hall, is not, in my opinion, borne out by experience. There is no doubt that many of the old and renowned sherry growers are above adulterating or falsifying their wines, but there are others whose concoctions of water, alcohol, and chemicals under the name of wine were destroying the legitimate wine trade of Spain. Some of these parties could be named without going out of Cadiz.

R. W. TURNER,

UNITED STATES CONSULATE, *Consul.*

Cadiz, May 5, 1892.

PLASTERING OF WINES IN JERES.

[Inclosure 1 in Consul Turner's report.]

It is notorious that the true and reputed wines produced in the district of Jeres de la Frontera require a prolonged and most careful breeding, with the object of bringing them to that state of perfection which prepares them for use and exportation and gives them those peculiar qualities so esteemed by all intelligent wine-drinking people, which qualities are enhanced with time.

During the time of such breeding the wines suffer certain ullages, principally in their watery component, thereby concentrating their chief attributes, which constitute the essence or extract, and increasing the natural alcoholic strength as the result of nature's phenomena, the desiderata of which is as yet ignored even by the most intelligent in the matter.

Hence a must which, after fermentation, would be found to contain not above 2 grams of sulphate of potash per liter would shortly after exceed such limit, and more than duplicate—even triplicate—it when from must it had reached the state when considered as old wine.

Again, even though, as an object of discussion, it be admitted that the sulphate of potash be in anywise noxious as existant in sherry wines, it must be borne in mind that, as the juice of the grape in passing from must to wine and increasing in age develops its acoholic strength, in like manner are developed its characteristic strength, as well as aromatic and spirituous principles. Hence it is impossible to consume such wine in the quantities and with such freedom as occurs with new and light wines, and, as regards the physiological effects which may be attributed to the sulphate of potash, such are decidedly modified, if not completely neutralized, by the tonical action of the other principles of sherry wines.

That the sprinkling of the grape, when in the wine press, with lime is an immemorial custom *cela va sans dire*, and that the custom has been and is nonproductive of pernicious effects, does not stand to reason.

It is an undisputed fact that the use of lime in sprinkling the grape when being trodden in the wine press has in no wise been an obstacle to the fame, credit, or praise of sherry wine, nor has the fact prevented their being worthy of the highest recommendation by most eminent and reputable medical authorities.

In different medical congresses formed of the most eminent members of Spain, as well as other countries, the wholesome, salutary conditions of sherry wines have been unanimously proclaimed, thereby confirming the credit obtained by said wines in innumerable expositions.

In conclusion, in support of this assertion of the nonpernicious effects of sulphate of potash in sherry wines, even when exceeding 2 grams per liter, while a limit might with justice be fixed as regards such wines as are termed *de pasto*, or light colored, and freely drank, such is not applicable with pure and mature sherry wines, the reason of which is obvious. Of *de pasto*, or light colored, and freely drank wines, it can be considered that the consumption is 1 liter per capita per diem, whereas with mature sherry wines the use is not daily, in a universal sense, nor can it reach the quarter part of the consumption of light wines; hence the amount of sulphate of potash imbibed by those drinking mature sherry wines would be insignificant, and, if insignificant, harmless.

To all those who are truly cognizant of what they are, it is an established and undeniable fact that, alone among wines, true and mature sherries have that attribute of absolute individuality which preëminently distinguishes them from wines produced in other countries, which, open to adulteration and falsification, inundate all markets of the world, to the prejudice of the reputation of sherry wines, *fiat lux profecta;* and all charges or accusations against sherries will of their own instability fall to the ground.

A commission representing the interests of this city, comprising the mayor and four prominent wine merchants of the locality, was sent to Madrid with the object of obtaining a modification in the late royal Spanish law in those parts which refer to the plastering of wines as regards sherries. Its representation to the minister of fomentation has elicited

the promise that the article of the said law regarding the plastering of wines will be greatly modified, if not entirely abrogated, as concerns sherry wines.

Anent the visits of inspection as prescribed by the law herein referred to, while it is unanimously admitted that all zeal on the part of the Government in avoidance of adulteration and falsification can in no wise be too enthusiastically approved, the visits of inspection to the wine cellars of Jeres de la Frontera would but be productive of much inconvenience to the wine-breeders, owing to the special conditions in which the breeding and care of the wines are practiced.

In closing, I am justified in asserting that, based on my experience of years as an employé in different wine-shipping houses of this city, and my intimate acquaintance in all of the wine cellars here, which permits of my observing and studying all their operations, to none of those houses whose invoices pass through my hands as of shipments to the United States can be imputed the charge of adulteration or falsification in the preparation of their wines and brandies.

JAMES A. HALL,
Consular Agent.

UNITED STATES CONSULAR AGENCY,
Jeres de la Frontera, May 2, 1892.

DECREE AND LAW RESPECTING THE FALSIFICATION OF WINES, ISSUED BY THE SPANISH GOVERNMENT UNDER DATE OF MARCH 11, 1892.

[Inclosure 2 in Consul Turner's report.—Translation.]

In conformity with the proposition of the minister (secretary) of fomentation (development of trade and industries) and concurrent with the council of ministers, I hereby, in name of His Majesty, my son, the King Alfonso XIII, and as Queen Regent of his Kingdom, decree the following:

ARTICLE 1. It is prohibited that the name of wine be given to any product which is not the liquid resultant from the fermentation of the juice of the grape, exempt from the addition of any matters foreign to the components of such juice.

ART. 2. In the elaboration or preparation and keeping or conservation of wine only the following operations will be permitted:

(1) The mixture (blend or melange) of different natural and pure wines to obtain commercial classes and styles.

(2) The strengthening or fortifying of wines with spirits of wine or with that spirit resulting from the juice produced from the pressed skin of the grape, when such alcoholic liquid is perfectly clarified and purified.

(3) The clarification of wine by means of glue or albumen, either as produced from eggs or blood, when such glue or albumen is not altered as regards its natural properties or components.

(4) The sulphuring of casks in which wine is to be prepared.

(5) The preservation of wine by natural means without the use of matters foreign to such natural wines.

(6) The addition of common salt in a proportion of 2 grams to the liter of wine.

(7) The addition of cream of tartar.

(8) The sprinkling of the grapes when in the wine press with lime,* when the use of such lime does not produce in the wine resulting from the pressing of the grapes more than 2 grams of sulphate of potash to the liter.

* An immemorial custom, the object of which is to impede the development of acridness in the must, which might tend to its turning to vinegar instead of wine, and also to absorb the watery matter prevalent in the grape, thereby producing in the wine resulting from the must the concentration of those qualities which constitute the typical richness and body of the sherry wines.—J. A. H.

(9) The addition of perfectly pure sorghum sugar.

ART. 3. The use of alcoholic beverages and the addition of the following matters with wines in preparation is absolutely prohibited: (1) Industrial alcohols, *i. e.*, all alcohols not proceeding from the distillation of products of the vine; (2) coloring matters, no matter of what nature; (3) salicylic acid; (4) boracic acid; (5) glycerin; (6) alkaline carbonates; (7) litharge; (8) all metallic salts; (9) sugar produced from vegetable-root flour; (10) acrid substances or astringent principles; (11) perfumes, ethers, and essences; (12) all other matter foreign to wine which may be used in the elaboration of or addition to same, and which may not be mentioned in article 2.

ART. 4. Such wines and alcoholic beverages as may be found to contain any of the matters named in the foregoing article will be qualified as adulterated and noxious to health, and the manufacturers or venders of such subject to punishment for crime as defined in article 356 of the penal code.

ART. 5. With the exception of medical preparations, the elaboration and sale is strictly prohibited of any liquid or product under the name of wine which does not comply with the prescription of articles 1 and 2 of this royal decree.

ART. 6. The strict fulfillment of the former resolution is imposed upon the civil governors and their delegates, and to such end visits of inspection are to be made to the establishments where wine and alcoholic beverages are elaborated and sold when there may be suspicions of the infringement of said resolutions. Such inspections should be made by land surveyors or competent pharmaceutical or medical authorities, and when not such by competent persons named and appointed by the governor of the province.

ART. 7. The parties who are nominated to make such visits as are defined in the former article will receive as remuneration 25 pesetas for each visit, as also traveling expenses from their place of residence to that of establishments visited. Such remuneration and traveling expenses are to be for and on account of and paid by the owner of such establishment in all cases where the infringement of the resolutions of this royal decree is proven.

ART. 8. In the act of carrying out the visits of inspection referred to in article 6 the delegate so appointed will, in the presence of the owner of the establishment or his representative and two witnesses, take three samples of each liquid suspected as adulterated or falsified, in quantities of not more than 1 liter. Of such samples taken, after being duly and equally sealed, one is to be delivered by the delegate to the owner of article denounced and two forwarded to the governor of the province. Duplicate act or record shall be taken of such operation, one copy to be delivered to the owner of the establishment and one retained by the official delegate, to such end as may be conducent.

ART. 9. Apart from the criminal responsibilities defined in articles 356 and 547 of the criminal code, the infringers of any of the parts of the present royal decree will be administratively mulcted in sums not to exceed 500 pesetas and punished with the closing of the establishment, as follows: Fine and closing of the establishment where adulterated wine or alcoholic beverage is elaborated; where such adulterated articles are sold, fine will be imposed for first infringement, and fine with closing of establishment in case of repetition of infringement. The imposition of fine and closing of establishment are to be within the competency of the civil governor, based on the due judicial proceeding and analysis of the denounced articles, for which analysis the samples taken by the visiting delegate will be used.

ART. 10. Against the decree issued by the governors of provinces in the rights invested in them by the foregoing article, the privilege is granted within the term of fifteen days of appeal to the minister of fomentation, who will decide the justice of such appeal after analysis of the denounced articles by the laboratory of the enological central station of Alfonso XII's agricultural institute. To this end, on forwarding the record of proceedings in the cases decreed by the governor of the province, this official will send one of the two samples taken by the delegate when visit of inspection was made in conformity with prescriptions of article 8, and the appealer will, with his appeal, forward his sample, the intact state of seals on same being duly attested by the public officer receiving same. In case the said seals should not be

found intact or show signs of having been tampered with, the result of the appeal will depend on the analysis of the sample forwarded by the governor of the province.

ART. 11. The royal order of February 23, 1860, is now derogated, as also any and all other resolutions which may be in opposition to the present royal decree.

Given in the royal palace at Madrid this 11th day of March, 1892.

MARIA CRISTINA.

AURELIANO LINARES RIVAS,
Minister (Secretary) of Fomentation.

MEXICAN EXPORTS.

REPORT BY CONSUL-GENERAL GUENTHER, OF MEXICO.

From a statistical abstract of Mexican exports for the first half of the fiscal year 1891–'92 (six months ended December 31, 1891), prepared by the treasury department and just issued, it appears that the total value of all exports during that period amounted, in Mexican dollars, to $41,246,514.48, of which sum $29,584,894.10 was the value of precious metals and precious metal ores and $11,661,620.38 the value of all other articles of merchandise. The exports to the United States amounted to $25,813,167.92, $17,508,435.36 being the value of precious metals and precious metal ores and $8,304,732.56 of all other merchandise.

It will be seen that the United States received 62.5 per cent of the total value of all articles exported, inclusive of precious metals and precious metal ores, or 59.2 per cent of the total value of the exports of precious metals and precious metal ores and 71.2 per cent of the total value of all exports, exclusive of precious metals and precious metal ores.

The following are the articles and value in Mexican dollars of the exports, exclusive of precious metals and precious metal ores:

Articles.	Value.	Articles.	Value.
Henequen	$2,956,874.94	Chicle	$379,302.10
Lead	1,390,951.96	Ixtle	333,379.70
Coffee	1,240,966.92	Materials for paper	290,120.00
Hides	778,651.81	Chick-peas (garbanza)	239,781.73
Woods of different kinds	768,526.89	Coal	127,963.00
Tobacco	725,649.15	All other merchandise	816,280.82
Vanilla	724,695.61	Total	11,661,620.38
Copper	461,320.88		
Broom wood (zacaton)	428,114.87		

The total value of all exports during the first half of the fiscal year 1891–'92 exceeded that of the corresponding period of the year 1890–'91 by $8,876,019.42, of which sum $7,419,701.17 was in the value of precious metals and precious metal ores and $1,456,318.25 in the value of all other merchandise.

The Mexican dollar is at present quoted at 68.5 cents American.

RICHARD GUENTHER,
Consul-General.

UNITED STATES CONSULATE-GENERAL,
Mexico, June 2, 1892.

WAGES OF TELEGRAPHERS IN GREAT BRITAIN.

REPORT BY CONSUL SHERMAN, OF LIVERPOOL.

In the Government service telegraph operators are divided into two classes, and the maximum pay is fixed according to the size or importance of the town.

The weekly wages are as follows:

Description.	First year.	Second year.	Third year.	Minimum.	Annual increment.	Maximum (according to size of town).
Men:						
First class				$9.73	$0.48	$12.16, $12.65, $13.13, $13.62.
Second class	$2.92	$3.40	$4.38		.48	$7.78, $8.51, $9.24, $9.73.
Women:						
First class				6.80	.36	$7.78, $8.02, $8.26, $8.51.
Second class	2.43	2.92	3.65		.36	$5.81, $6.07, $6.32, $6.56, $6.80.

The second class of men contains twice the number in the first class, and the women's classes are in similar proportions. The number of women employed is one-third of the total force.

Eight hours constitute a day's work, and any time beyond eight hours is regarded as extra duty, and is paid for at one rate and a quarter of ordinary wages, *i. e.*, for every hour of overtime the operator is credited with one and one-quarter hours. Night duty consists of seven hours, that is to say, every hour served between 10 p. m. and 5 a. m. is regarded as equal to one hour seven and a half minutes. On Saturdays the operators are allowed one or two hours off if business permits.

Operators are paid at the rate of one forty-eighth of their weekly wages for each hour they work on bank holidays, and one forty-eighth, with one-quarter added, for each hour worked on Sunday, Good Friday, and Christmas, in addition to their weekly wages.

The railway companies maintain and operate telegraph wires for their own purposes, such as the block system for signaling trains and messages concerning railway traffic; they also maintain public telegraph wires, which are erected on the same poles as their own wires, for the post-office.

Operators employed at railway offices are the servants of the various railway companies and are paid by them.

The companies are allowed commission of 1½*d.* (3 cents) for every telegram they forward or receive on behalf of the post-office.

The charge for inland telegrams is half a penny (1 cent) per word, with a minimum charge of 6*d.* (12 cents).

On the London and Northwestern Railway the pay of telegraph operators is based on three hundred and sixty-five days in the year. The question of Sunday overtime was gone into some years ago, and it was arranged

to give the operators an allowance of $12.65 per year, or $1.05 per month, in lieu of overtime, and this is paid them whether they perform one or more days' Sunday duty in the month. The scale of pay for telegraph operators is $145.99 per annum, rising to $389.32 by annual increments of $24.33, and the ordinary hours of duty are ten or twelve per day. Of course, the pay of operators in charge is higher and according to the class of station, rising from $437.98 to $729.97.

On the Midland Railway the pay of telegraph operators is on the following scale:

Year of service.	Pay.	Year of service.	Pay.
First	$97.33	Sixth	$291.19
Second	121.66	Seventh	316.32
Third	170.32	Eighth	340.65
Fourth	218.99	Ninth	364.98
Fifth	267.65	Tenth	389.32

Salaries above $389.32 are dealt with according to the special circumstances of each case. Eight hours, as a rule, constitute a day's work. The operators employed in the freight department do not work on Sundays or national holidays; those in the passenger department work on such days in rotation, according to the number employed, *i. e.*, if there be only two in an office they work on Sundays and national holidays alternately, and so on, but do not receive extra remuneration for so doing.

On the Great Western Railway the rates of pay of telegraph operators vary in the case of juniors from $97.33 to $291.19 and in the case of adults from $340.65 to $729.97 per annum. The average hours per day are ten. They are required to work on Sundays and national holidays when their services are necessary, and do not receive extra pay for so doing.

On the Lancashire and Yorkshire Railway the wages of first-class telegraph operators range from $4.86 to $6.32 a week, and ten hours constitute a day's work, exclusive of meal hours, which are not allowed. Eight hours constitute a day's work of those operators who are required to perform Sunday and night duty in their turn. National holidays are not recognized; neither are the operators compensated specially for working on those days. They are, however, allowed an annual holiday of six days with pay.

THOS. H. SHERMAN,
Consul.

UNITED STATES CONSULATE,
Liverpool, July 18, 1892.

FRENCH TAPESTRIES.

REPORT BY CONSUL-GENERAL KING, OF PARIS.

Referring to instruction dated February 18, calling for a report on the manufacture of the "Gobelins," I would apologize for the delay in forwarding this report, occasioned by difficulties in securing the necessary data for the same. The manufactory is not situated in the Rue Mouffetard, as stated in the instruction, but at No. 42 Avenue des Gobelins.

I am unable to furnish any general information concerning it, but the inclosed report, which has been prepared by Mr. George Debray, who is connected with this office as a special expert, will be found to contain certain details of manufacture. I inclose some historical notes relative to the Gobelin manufactory, and also communications sent to me by the consul at Marseilles and the vice-commercial agent at Limoges relative to the tapestry manufactories of Nîmes and Aubusson, respectively. In connection with the above, I beg to call the attention of the Department to the fact that it is extremely difficult to obtain information from French manufacturers.

ADAM E. KING,
Consul-General.

UNITED STATES CONSULATE-GENERAL,
Paris, May 9, 1892.

GOBELIN, BEAUVAIS, AND AUBUSSON TAPESTRIES.

[Inclosure 1 in Consul-General King's report.]

Cotton warps, denominated "boyaux" are employed.

The weft employed is "two-fold wool," and is a species of Australian mohair wool, denominated "laine brodé," and having the characteristics of being firm and open.

The wefts are dyed by expert chemists and dyers, with the old method of wood dyes (indigo, cochineal, curcuma, etc.). From six to eight thousand shades are dyed and employed, on account of the shadings. The dyes employed render very bright and resisting shades.

Besides the woolen tapestries, part wool and part silk tapestries are also manufactured, as also a limited number of all silk. When silk is employed with wool, it serves to make the design clear.

The method of manufacturing Gobelin and Beauvais is as follows: A small esquisse, or design, is first painted in oil colors of the tapestry to be manufactured, after which a second one, but of natural size, is painted, permitting to distinguish, besides the exact size, the colors and graduations of the future tapestry. The design is then traced on the back of the boyaux, or warp, with inK, or, more generally, with special pencils, with the aid of tracing paper, from the large oil painting. The colors (wefts) being then dyed, prepared, and assorted, and each one contained on a "spoulin" made of boxwood and shaped in this manner—

Boxwood tapestry spoulin.

the artists proceed with the weaving. When a tapestry is large, it is divided into several divisions, each workman weaving a division, which is rolled upon the looms as fast as manufactured.

The quality of Gobelin tapestries is obtained by employing boyaux, or warps, ranging from 6 to 10 threads and wefts ranging from 12 to 20 threads, according to the fineness or quality of the work required.

In the manufacture of Beauvais tapestries warps, or boyaux, ranging from 6 to 12 threads are employed and wefts ranging from 12 to 20 threads. In the manufacture of both Gobelin and Beauvais tapestries the wefts are, in general, double in quantity the number of warps, but a triple quantity is also employed; for example, a warp counting 6 boyaux may be woven with wefts of 12, 14, 16, 18, or 20 threads.

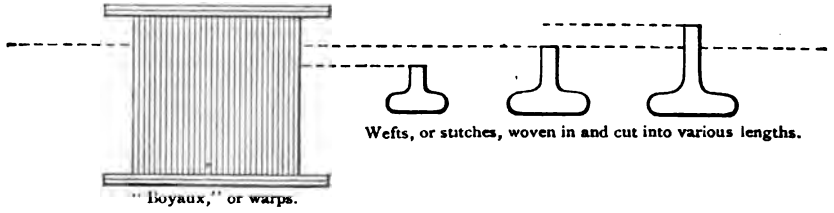
The number of colors entering into a tapestry necessarily influences the quality, as on the same warp twenty different qualities may be manufactured, according to the number of colors employed. The value of each respective color is considered double, that is, the value of two colors is double that of one color, three colors triple that of one color, etc. The subjects that the tapestries represent also influence their value, ordinary shaded green landscapes, for instance, costing much less than portraits requiring a variety of colors.

The value of Gobelin and Beauvais tapestries ranges from 3,000 to 4,000 francs per square meter for Gobelin, and for Beauvais tapestry the average price per square meter is 7,000 francs.

The characteristics of the Government manufacture des Gobelins are especially large historical scenes, reproductions from celebrated paintings, etc., and which are official commands. This manufactory is not permitted to sell to private parties except upon permission of the minister of fine arts, under whose direction it is placed, as is also the manufacture de Beauvais. The characteristics of the Beauvais manufacture are almost in an exclusive manner small designs, among which are a large number of flowers, etc. The designs are, in general, much more complicated than those of the Gobelin manufactory.

The warps, or boyaux, employed at the Gobelin and Beauvais manufactories are always perpendicular and the wefts horizontal.

To the Gobelins manufacture is joined the carpet manufacture of "la Savonnerie," which velvet carpets, reproducing historical and mythological subjects, are manufactured in the same way as velvets, that is, the wefts, after having been woven into the warps, are sheared upon the face of the tissue (facing the artists) by measurement to a given length, to give more or less thickness to the velvet effects. The warps are disposed in the same manner as for the manufacture of tapestries, but the artists work with the face of the tissue facing them, while it is the reverse in the manufacture of tapestries.



In the city of Aubusson there are but private manufacturers, who manufacture upon the same general principle as in the State manufactories, but simplifying the procedure and not manufacturing as fine or with the same care and time.

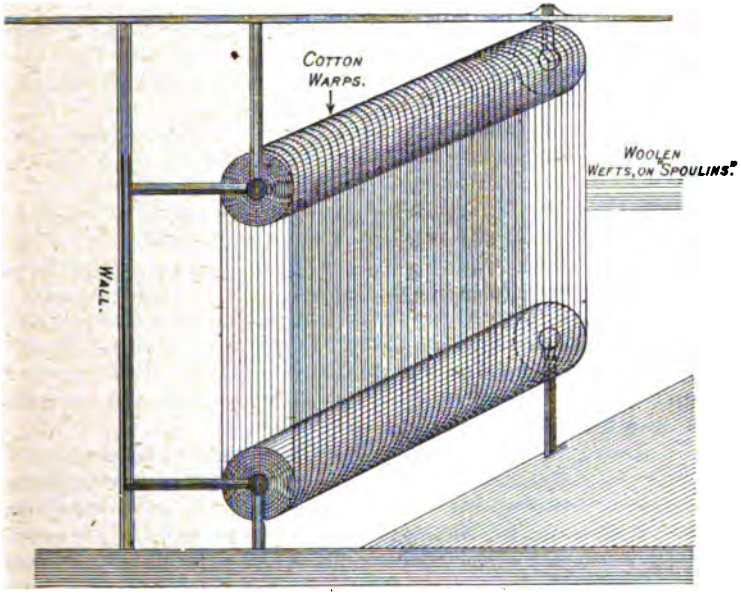
The warps employed at Aubusson are always in a horizontal position, and the designs, which are, in general, but "gouache," or water-color designs, and sometimes ordinary oil paintings, are merely placed beneath the boyaux, or warps, in such a manner that the workmen may distinguish them and follow the designs and colorings. However, when great attention is given, tapestries rivaling those of the State manufactories may be manufactured.

The artists employed by the French State manufactories receive very high salaries, while those employed at Aubusson by private manufacturers are not, in general, well paid.

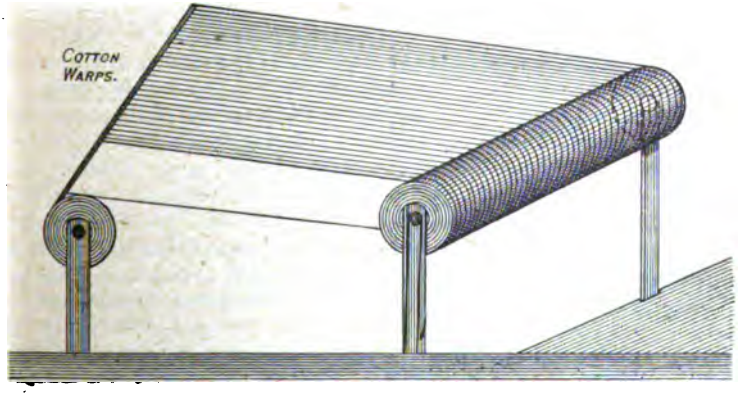
The time required to manufacture an ordinary tapestry (ordinary dimensions) at the Gobelin or Beauvais manufactories is, on an average, three years, while at Aubusson a few months are sufficient. Hand looms only are employed.

GEORGE DEBRAY,
Special Expert.

UNITED STATES CONSULATE-GENERAL,
Paris, May 5, 1892.



Gobelin and Beauvais hand loom. (Perpendicular.)



Aubusson hand loom. (Horizontal).

HISTORY OF THE GOBELINS.

[Inclosure 2 in Consul-General King's report.]

The "Manufacture des Gobelins" was established in the year 1607 by Henry IV, in the scarlet dye works founded by Jehan Gobelin, on the banks of the River Bièvre, in the fifteenth century. After an exploitation of more than fifty years, it was bought in 1662 by Louis XIV, who, on the advice of Colbert, established the "Manufacture des Meubles de la Couronne." Eight hundred workmen were then employed, three hundred of whom lived on the premises. The most celebrated artists conducted the work, either from their own designs or plans or from the designs of the best Italian masters.

Besides the tapestry workers of the high and low warp and artists in mosaic working in the Florentine style, cabinetmakers and goldsmiths were also employed side by side with studios of the statuaries, the latter working especially for Versailles.

After the reign of Louis XIV the Gobelins only manufactured tapestry. The tapestries were twisted at Chaillot, in the building of a large soap factory named "la Savonnerie" (which no longer exists) and in which Louis XIV had established a workshop to occupy the children of the hospitals. In 1826 the works of the Savonnerie were transferred to the Gobelins, where they replaced the works of low warp, which were taken to the manufactory of Beauvais.

A large part of the buildings were burnt down during the Commune, on the 25th of May, 1871 (civil war in Paris). The exhibition rooms, with their contents, were consumed.

The celebrated manufactory of the Gobelins of dyeing and carpets at Paris takes its name from Jehan and Gilles Gobelin, celebrated dyers, who, about 1450, had established on the River Bièvre dye works in order to perfect the application of the scarlet color. Their factory soon acquired a great renown. Jehan Gobelin, the head of the family, died in 1476. The establishment was bought by Louis XIV and transformed in 1667 into a manufactory of furniture for the Crown, which furniture was executed with the greatest taste and luxury. In consequence of the great financial distress of the Crown in 1694, these clever workmen were sent away, and when the Gobelins were reopened several years after the work was restricted to the fabrication of tapestry for crowned heads and eminent personages.

The national manufactory of the Gobelins is now divided into three distinct sections—the dye shops, tapestry shops, and carpet workshops. The dye shops or works produce not only every kind of color, but twenty to thirty different shades of each. Owing to the labors of the eminent chemist M. Chevreuil, the colors produced are perfectly adherent.

The execution of the work is so slow that an artist can not produce in one year more than one-fourth of a square yard. In 1826 the manufacture of carpets was added to tapestry. These carpets are remarkable for their softness and the evenness of their tissue. Some of these works take from five to ten years to execute and cost from 60,000 to 150,000 francs.

After having made several trials, not without success, to struggle with the hand painting by reproducing pictures, the tapestry works are especially employed for the fabrication of decorative hangings having a special destination and essentially decorative. Tapestries made in velvety tissue are also executed. The present manufactory will shortly be rebuilt.

Among the tapestries exclusively executed and exhibited at the Gobelins the following are worthy of remark: The Sacrifice of Abraham; Audience given by Louis XIV to Cardinal Chigi, the Pope's Legate; Cybele Imploring Jupiter, Nymphs Dancing, Autumn, portrait of Colbert, portrait of Louis XIV (full length), portrait of Charles Lebrun, Le Château de Blois; Marriage of Alexander and Campaspe, Queen of the Amazones; the Triumph of Pallas, Louis XIV Visiting the Gobelins, and the Death of Joab. Several other tapestries in Indian dyes, ancient Persian carpets, and Dutch tapestries of Bruges and Beauvais also form part of this exhibition. The portrait of Louis XIV, by Rigaud, is considered the chef-d'œuvre of the Gobelins.

On the first floor there are two tapestry workshops, where the work on hand consists of hangings, which, being composed of several large pieces, will remain a long time on the

frames. They are destined to decorate a drawing room of the Palais de l'Elysée, a room of the National Library, and the staircase of the Senate at the Luxembourg.

On the left-hand side of the rez de chaussée and opposite the exhibition rooms are the workshops of the "Savonnerie," where they have on hand the hangings for the Pantheon, for a saloon of the Elysée, and the vestibule of the National Library.

TAPESTRY MANUFACTURE AT NÎMES.

[Inclosure 3 in Consul-General King's report.]

The manufacture of silk tapestry at Nîmes has been gradually going down ever since 1750; but other industries have arisen to take its place, especially carpet-making (employing 600 to 800 hands), shawl and tartan making (1,800 hands), silk neckerchiefs (800 hands), as well as the following articles in silk: Stay and other laces, braids, sewing thread, gloves, and silk twist. The total number of hands employed in these industries amounts to 5,450.

Nîmes also produces "tapis velonté" for furniture, in the manufacture of which certain processes are made use of which are the invention of the Nîmes manufacturers, and of which they retain the monopoly.

The chief feature which distinguishes the tissues of all sorts manufactured at Nîmes, fine or coarse, from those produced by the looms at Aubusson is their entirely mechanical production. When once the design is established and the threads are arranged, any number of copies may be struck off, thus enabling the production to be sold at an infinitely lower rate than designs which have to be laboriously copied by hand for each reproduction.

CHARLES B. TRAIL,
Consul.

UNITED STATES CONSULATE,
Marseilles, May 11, 1892.

DR. PERRY TO CONSUL TRAIL.

NÎMES, *May 5.*

DEAR SIR: I have not been able to find out much about the manufacture of tapestry here, for the reason that the business, which was formerly a very important one, and especially with the United States, is slowly dying out. There are only three houses now, and they sell their goods at Paris.

The carpet business was also a flourishing one, but since the protective tariff is in vogue they can not compete with the American article.

Hoping soon to have the pleasure of seeing you here, and presenting you to any of these gentlemen you may care to see, believe me to be as ever,

Very respectfully yours,

F. E. PERRY.

TAPESTRY MANUFACTURE AT AUBUSSON.

[Inclosure 4 in Consul-General King's report.]

Aubusson (Creuse) is a town of about 7,000 inhabitants. The chief industry consists in the tapestry manufactures. The oldest manufactories were established in the fifteenth century. There are manufactured two very different kinds of tapestry.

(1) The artistic tapestry (kind of Gobelin tapestry), used for armchairs, furniture, hangings affixed to walls, etc. These sorts can be seen exhibited at Messrs. Braquenié Brothers, 16 rue Vivienne, Paris. The manufacturers of these artistic works are MM. Braquenié frères,

Duplant et Hamot, Bernaud, Vve. Tabart, Tricot, Tramicheek, Gaunaud. The prices are from $15 to $100 per square meter, according to the shades and fineness of designs. About 2,000 workmen are occupied in the production, the wages being 80 cents per day.

(2) The ordinary tapestry (carpets of all kinds) for floors. The leading manufacturers are MM. Croc père et fils et Jorrand (house in Paris at No. 12 rue de Cléry), and MM. Sallandrouze Brothers. These two manufactories do mechanical weaving (Jacquard frames). The carpets are worth, according to quality, from 75 cents to $3 per square meter. The number of workmen is 1,900.

A. JOUHANNAUD,
Vice-Commercial Agent.

UNITED STATES COMMERCIAL AGENCY,
Limoges, April 20, 1892.

HOPS IN BADEN, RHEIN-HESSEN, AND THE PALATINATE.

REPORT BY CONSUL WINTER, OF MANNHEIM.

For the year 1891 there were 7,351 acres devoted to hop culture, being 2,728 hectares in Baden, 47 hectares in Rhein-Hessen, and 201 hectares in the Palatinate (Rhein Pfalz); total, 2,976 hectares (1 hectare=2.47 acres).

The years 1890 and 1889 were practically the same as to area.

The total weight of the hop crop harvested on this area in 1891 was 2,950,000 kilograms (6,490,000 pounds).

Though the area devoted to hops was the same in 1890, the quantity and quality were not equal to 1891. The quantity in 1890 was 5,115,440 pounds.

The area and the quantity and quality of the hop crop of 1889 were substantially the same as that of 1890.

There was no part of the crop of 1891 in the hands of growers or farmers on January 1, 1892, and very little of it in the hands of dealers at the beginning of this year.

On January 1, 1891, there was still a small stock in the hands of growers; about one-fourth of the crop was in the hands of farmers and dealers.

The hops grown in these respective districts are consumed at home, practically very little being exported to other parts or countries.

Hops are imported from Austria (Bohemia) in considerable quantity and consumed by the large brewing establishments of Baden and the Palatinate. About the same quantity was imported in the year 1891 as in the preceding year, the amount of the import showing, in fact, no material change for some years past.

Prices in Baden were as follows: In September, 1891, 70 to 90 marks per 50 kilograms, according to quality, the highest price, 90 marks, being paid for prime quality; on January 1, 1892, prices were up to 120 marks per 50 kilograms for average quality and 130 marks for prime quality.

The following are the addresses of the largest planters or growers of hops: Burgermeister C. Mechling, Schwetzingen, Baden, Germany; Altburgermeister Breiter, Sandhausen, bie Heidelberg, Baden, Germany; Dr.

Herdt, Heidelberg, Baden, Germany. The latter's hop farm is in Hessen, near Keppelheim.

The leading hop merchants are Messrs. Mayer & Dinkel, Mayer & Lerna, and Oppenheimer & Co., of Mannheim, Baden, Germany.

I am largely indebted for the foregoing statistics to Messrs. Mayer & Dinkel, hop merchants and exporters of Mannheim, an enterprising and reliable firm which does considerable export business to the United States.

The hop culture is carried on by small farmers, who cultivate but a few acres; large plantations, like some to be found in the United States, are not to be even thought of in Germany. Another difference is in the harvesting and preparing of the crop for market. The German hop-grower only dries his hops before placing them on the market, while the American hop-grower dries them and packs them up before offering his crop for sale. The German hop merchant purchases the crop in the field, and, though the hops are dried or cured, the buyer must do his own packing preparatory to shipment.

JNO. F. WINTER,
Consul.

UNITED STATES CONSULATE,
Mannheim, May 11, 1892.

THE CAMPHOR TRADE OF JAPAN.

REPORT BY CONSUL SMITHERS, OF OSAKA AND HIOGO.

The camphor tree, from which the resinous gum is distilled, is a species of the laurel, and is found in the provinces of Tosa, Hiuga, and Satsuma, in the south of Japan. Large groves of the trees are owned by the Japanese Government, the wood being very desirable for shipbuilding. The districts in which the camphor tree is found are mountainous and situated far from the sea. No reliable information can be obtained as to the cost of producing the gum before being transported in junks to Hiogo. The peasants who engage in distilling the roots and branches of the trees are said to be poor and employ the rudest machinery.

The market value of crude camphor gum and of oil of camphor per picul (133⅓ pounds) during the past year was as follows:

Drained	$38.25
Wet	37.00
Old dry	43.50
Average	36.50
Camphor oil	5.25

The highest and lowest prices during the same period were as follows:

Highest	$40.00
Lowest	33.00

Camphor gum is exported in tubs measuring about 6½ cubic feet; oil in kerosene tins and cases. The grades are from old dry down to new wet, and

the various grades depend upon the quantity of adulteration. In oil there are two grades—white and brown.

Adulteration is practiced for the most part by adding water and oil just as far as the buyer will tolerate. In some cases 20 pounds of water will run out of a tub in twelve hours. The unadulterated article, known as the good old dry, can sometimes be bought. The only system of tests in determining value of the different qualities is by burning and by absolute spirit. The percentage of pure camphor which the crude yields when refined varies according to the quality of the crude. The average percentage of gum produced from the wood as compared with the original weight of the wood can not be accurately ascertained here, the only foreigner known to have visited the camphor districts having declined to furnish any information on the subject.

To importers in the United States who wish to obtain accurate knowledge of the camphor industry in all its details, including the purchase and shipment of the article, I would specially recommend that a competent agent be sent to Japan to visit the camphor districts and study the process of manufacture, packing, etc.

Statistics of the export trade of camphor from Hiogo during the years 1889–'91 are as follows, in catties of 1⅓ pounds each:

Table showing the exports of camphor from Hiogo.

Whither exported.	Quantity.		
	1889.	1890.	1891.
	Catties.	*Catties.*	*Catties.*
Europe (countries not specified)	155,100	683,400	1,777,300
London	1,028,700	1,246,500	335,600
Germany	1,128,200	490,700	209,200
United States	1,251,600	175,000	1,277,000
China	340,600	855,400	51,900
France	207,400	265,100	199,400
Total	4,111,500	3,716,100	3,850,400

Table showing the exports from 1880 to 1891.

Year.	Quantity.	Year.	Quantity.
	Catties.		*Catties.*
1880	2,022,000	1886	3,495,200
1881	2,134,400	1887	4,816,400
1882	3,161,000	1888	2,839,400
1883	3,566,000	1889	4,111,500
1884	2,990,000	1890	3,716,100
1885	2,220,700	1891	3,850,400

E. J. SMITHERS,
Consul.

UNITED STATES CONSULATE,
Osaka and Hiogo, May 5, 1892.

MANUFACTURE OF CAMPHOR.*

REPORT BY CONSUL JONES, OF NAGASAKI.

The manufacture of camphor is an important industry on the island of Kiu Shiu (Kew Shew).

From the port of Nagasaki there were exported in the year 1882 15,186.18 piculs, valued at $277,792. A picul is 133⅓ pounds. From other ports of the island not yet open to foreign trade a large quantity was shipped by native merchants in native vessels to Shanghai, in China, and Hongkong, whence it finds its way to India and England; little or none of it is exported to the United States. The camphor tree grows abundantly all over this portion of Japan. It is found alike on high elevations and in the valleys and lowlands. It is a hardy, vigorous, long-lived tree, and flourishes in all situations.

Many of these trees attain an enormous size. There are a number in the vicinity of Nagasaki which measure 10 and 12 feet in diameter. The ancient temple of Osuwa, at Nagasaki, is situated in a magnificent grove of many hundred grand old camphor trees, which are of great age and size, and are still beautiful and vigorous. I am told that there are trees at other places in Kiu Shiu measuring as much as 20 feet in diameter. The body or trunk of the tree usually runs up 20 and 30 feet without limbs, then branching out in all directions, forming a well-proportioned, beautiful tree, ever green and very ornamental.

The leaf is small, elliptical in shape, slightly serrated, and of a vivid dark-green color all the year round, except for a week or two in the early spring, when the young leaves are of a delicate, tender green. The seeds or berries grow in clusters and resemble black currants in size and appearance. The wood is used for many purposes, its fine grain rendering it especially valuable for cabinetwork, while it is used also for shipbuilding. The roots make excellent knees for ships.

I have sent many seeds of the camphor tree to the United States, in the hope of adding to our own arboriculture.

In the manufacture of camphor the tree is necessarily destroyed, but, by a stringent law of the land, another is planted in its stead. The simple method of manufacture employed by the natives is as follows:

The tree is felled to the earth and cut into small pieces, or, more properly speaking, into chips.

A large metal pot is partially filled with water and placed over a slow fire. A wooden tub is fitted to the top of the pot, and the chips of camphor wood are placed in this. The bottom of the tub is perforated, so as to permit the steam to pass up among the chips.

A steam-tight cover is fitted on the tub. From this tub a bamboo pipe leads to another tub, through which the inclosed steam, the generated camphor, and oil flow. This second tub is connected in like manner with a third.

* Reprinted from CONSULAR REPORTS No. 31.

The third tub is divided into two compartments, one above the other, the dividing floor being perforated with small holes, to allow the water and oil to pass to the lower compartment. The upper compartment is supplied with a layer of straw, which catches and holds the camphor in crystal in deposit as it passes to the cooling process. The camphor is then separated from the straw, packed in wooden tubs of 133⅓ pounds each, and is ready for market.

After each boiling the water runs off through a faucet, leaving the oil, which is used by the natives for illuminating and other purposes.

A. C. JONES,
Consul.

UNITED STATES CONSULATE,
Nagasaki, March 26, 1883.

ELECTRICITY AND CONDUITS IN HAVRE.

REPORT BY CONSUL WILLIAMS.

Replying to Department circular of June 9, 1891, in relation to electric power, conduits, etc., I need to explain that my delay has been caused by the unfinished state of that enterprise here, the plant therefor having been but recently erected.

Answers to several questions asked of the engineer were delivered to me to-day, and I hasten to transmit.

It is my belief that knowledge of what is here at Havre will not be of value further than to show its insignificance as contrasted with kindred enterprises in American cities of like population and importance. Seemingly Europe died in giving birth to America.

(1) The capital of the electric company is 200,000 francs, or $38,600.

(2) It supplies at present no street or other public lights.

(3) It supplies 14,000 private lights of from 10 to 16 candle power.

(4) Also, to the docks, 14 elevated lights, 82 feet in elevation, of 600-candle power each.

(5) Private lights for stores, markets, etc., are of 300-candle power.

(6) The company's plant is of 1,500-horse power.

(7) The cities of Caen, Rennes, and Fécamp, in my consular district, also have electric plants, but neither in those cities nor at Havre is electricity used as a motive power.

(8) The length of underground conduits at Havre is 14 kilometers (8.69 miles) and are of diameters varied by sections from the plant to the outer terminus, there being 9 sections with diameters as follows, viz, 30, 25, 20, 16, 13, 11, 10, 8, and 7 millimeters, respectively. The conduit is of copper insulated with gutta-percha, then banded or incased in a wrap of metallic cloth and coated with coal tar. Thus prepared it is buried about 18 inches underground in a very frail and cheap case of wood, which, within and with-

out, is also coated with coal tar. The perfection of street drainage here doubtless makes such incasing ample for preservation.

(9) The system used is that of Ferenti.

(10) The business is that of a limited corporation.

(11) Perhaps the features of this enterprise most worthy of comment are the onerous and multiplied tax burdens under which it rests, and which are a fair sample of those of every business, limited or large, in France. For example, this company pays the city as taxes: On every ton of coal consumed, 96 cents; $19.30 per year for each kilometer (14) of its conduit; 5 per cent per year of gross receipts. The company is required to supply light to the city at two-thirds of the regular price for public buildings and at half the regular price for streets, parks, etc. Aside from the above burdens the company pays annual licenses to both the Government and the city. The total of this license is $298.80, 63 per cent of which goes to the General Government, 12 per cent to the departmental government, and 21 per cent to the communal government. The company also pays a rent on all buildings, engines, boilers, dynamos, conduits, etc. This rent is somewhat similar to ground rent, and is paid as an added tax, regardless of the fact that the company paying this rent owns the entire property.

The above notes refer to special burdens, and are to be added to such general and usual taxes as may be and are imposed upon property, incomes, rents, etc.

The electric company has no control over or connection with either the telegraph or telephone. There are 667 telephones in Havre.

O. F. WILLIAMS,
Consul.

UNITED STATES CONSULATE,
Havre, May 18, 1892.

CACAO IN ECUADOR.

REPORT BY CONSUL-GENERAL SORSBY, OF GUAYAQUIL.

The preparation for planting the cacao bean consists in clearing the land of all underbrush and trees by cutting and burning, which is commenced about July and pushed until the rainy season, beginning in November, December, or January. After the ground has been cleared of all débris, it is marked in rows about 3 yards wide, and in each row sticks are driven about 3 yards apart, and at the foot of each stick a hole about 3 inches deep is made, into which are put three or four beans, over which is thrown sufficient earth to cover them. The next step is to plant rice, bananas, or other cereals or plants of rapid growth and shade to protect the young cacao plant from the sun's rays. It is usual to thus protect the plant for three or four years.

The tree matures in six years, but begins bearing usually at four, after which the only care necessary is to cut out the weeds twice a year; and this is the only cultivation ever given the cacao tree in Ecuador.

An average of one thousand trees to the cuadra (about 1¼ acres) are planted. The life of the tree is about 100 years, the height about 15 feet; the trunk is clear of branches for 5 or 6 feet from the ground, and the foliage is a rich green and abundant.

A heavy, deep, vegetable soil is required, because the cacao tree has but one main root or taproot, which grows straight down 7 or 8 feet. If this main root or taproot strikes a clay or gravel formation the usefulness of the tree ceases.

The total cost of the purchase and preparation of the land, purchase and planting of the seed bean, and caring for the plant until maturity or until it has reached a safe stage will not exceed $300 per thousand trees.

The laborers to look after and care for the trees and to plant cereals or plants to shade the tree while young usually have the privilege of living upon and cultivating the land free of rent; there is not, however, any fixed rule. If the owner personally supervises the work of the estate, the labor is employed by the day, month, or year, and the revenue from the cultivation of the land—the planting of cereals or plants to protect the young cacao plant—belongs to the owner.

The manner of gathering the cacao is by cutting the pods from the tree with a large knife fastened to the end of a cane or pole. With these knives one set of laborers go ahead cutting off the pods, another follows gathering and throwing them into piles, another follows cutting the pods open, another follows scooping out the beans, and, finally, another follows with mules to carry the beans to an open, cleaned, and dry place, where they are dried by being spread in the sun for about six days. It is estimated that the total cost of gathering and preparing the cacao for the market does not exceed $3 per 100 pounds.

After gathering and drying, the bean is sent to Guayaquil in bulk or in sacks upon rafts, in canoes, or by steamers, at a minimum rate of freight, where it is disposed of by the planter to an exporter or commission merchant. After reaching Guayaquil the bean undergoes more treatment. It is unloaded from the rafts, canoes, or steamers by the laborers and taken to the warehouses (*bodegas*), where it is first cleaned by passing through a large sieve manipulated by two men. By this method the bean is cleared of the dust and dirt, leaving only the veins and hulls, which are picked out by hand, leaving, finally, the cleaned bean, which is spread in thin layers in the sun for four or five hours, when it is ready for sacking and shipment.

It is estimated that the loss in weight from handling after arrival at Guayaquil or final port of shipment is about 5 per cent, which is chargeable to the purchaser abroad, as the exporter, as a rule, buys only upon orders. In fact, every charge, from the time the cacao arrives at Guayaquil from the estate until it is placed on board of the steamer for shipment abroad, is paid by the foreign purchaser.

A commission of 2½ to 4 per cent, which constitutes the visible profit of the exporter or commission house, is charged to the producer abroad.

All of the refuse from cleaning the cacao, viz, the dust, pelotas, and dried veins, has a market value and goes to swell the profits of the exporter or commission house here. The fine dust passing through the sieve is worth $2 per 100 pounds; the hulls, or pelotas, $4 per 100 pounds; and the veins, used for food for horses and mules, $1 per bag.

There are three grades of cacao grown in Ecuador, as follows:

The "Arriba," the first grade, is grown on the Guayas River and its tributaries above Guayaquil. This is the best grade, and represents about 65 per cent of the whole crop, the main season for which extends from January to July.

The "Balao," the second grade, is grown below Guayaquil in a country adjacent to Port Balao, from which this grade derives its name, and equals about 10 per cent of the whole crop, the main season for which is from July to December.

The "Machala," the third grade, is grown still further south, adjacent to the port of Machala, and equals about 15 per cent of the whole crop, the principal season for which is the same as that of the second grade, Balao—from July to December.

The cacao district of Ecuador, as at present represented, embraces a radius of about 80 miles, with the city of Guayaquil as its base, though the best quality of cacao and the greatest yield per tree I have seen in the Republic was in the northern part of the province of Esmeraldas (where the placer gold regions are), where no attention is given to its culture; but the life of the plant is said to be of short duration, because the depth of the soil is not sufficient.

While it is true that cacao has its seasons, yet a little of each class is gathered and marketed outside of their respective seasons. That gathered after the principal crop is called "Rebuscoz," or gleanings, and often is as good as, or better than, that of the main season.

There are still two other classes or grades of cacao grown in Ecuador: One known as the "Caraquez," grown in the province of the port Bahia de Caraquez, on the coast north of Guayaquil, which is about the same in quality as the Machala; and the other is grown near the port of Esmeraldas, on the coast north of Bahia de Caraquez, and is superior to all other cacao produced in Ecuador, though the production is insignificant. The two latter grades represent about 10 per cent of the total.

In round numbers there are 30,000,000 trees, and the annual production is from 28,000,000 to 30,000,000 pounds of cacao.

The value of a cacao estate is based upon the number of trees thereon, and not upon the amount of land embraced therein. The nominal value of a tree is 1 sucre (equivalent to 70 cents according to present rate of exchange). This is the nominal value—the price at which they can be purchased when the owner seeks a buyer, which is a rare occurrence; when the purchaser

seeks the owner, he may have to pay as high as 2 sucres per tree. As a rule, cacao estates are not in the market. Taxes are nominal, the crop uniform, the profits great and sure, the labor cheap and reliable, and the immediate future free from danger of overproduction.

The methods of cultivating the tree and gathering and preparing the bean for market are difficult, tedious, and crude, everything being done by hand and nothing by machinery.

From the moment the pod is cut until the bean is sacked and embarked the least possible time is lost. Everything is pushed as rapidly as the habits and customs of the people admit, and it may be safely assumed that were a little study and more attention given the method of cleaning and curing the bean could be immensely improved in quality.

Ten dollars an acre would be the maximum price of lands suitable for cacao culture, $25 an acre the maximum cost of clearing and preparing, and $200 the maximum cost per acre of 700 trees—planting and caring for till maturity. Upon this basis an estate of 200 acres would cost:

Land	$2,000
Clearing and cleaning	5,000
Planting and caring for	40,000
Interest on capital at 10 per cent for five years (which is an overestimate, because the $40,000 need not be paid, except in installments, amounting to, say, $8,000 or $10,000 per annum)	23,500
Total	70,500
Minimum market value of 140,000 trees at 70 cents each	98,000
Clear gain	27,500

The profits arising from production may be determined upon a basis of half a pound per tree for the fifth year and 1 pound thereafter, by the following tables, compiled by Messrs. Martin Reinberg & Co., Guayaquil, exporters and commission merchants of the highest standing and responsibility. By these tables it will be noted that the yield of the season, whether short or full, affects the value of the cacao, the market value rising and falling in sympathy with good or bad seasons; and what is lost in the yield is gained in the price. Thus it is that, with a poor crop in 1891 and unfavorable reports for 1892, the price to-day is $18 per quintal for the best, or Arriba, grade. This state of affairs—the close sympathy of price with yield—is easily accounted for when it is borne in mind that the world's product and supply is inadequate to the demand.

The estimate of the cost of an estate of 200 acres, it may be well to repeat, is a maximum estimate, it being possible under favorable circumstances or by close personal attention and management to make the amount stated in dollars represent sucres.

Table showing quantity of cacao received at Guayaquil during the past four years.

Month.	Arriba.	Balao.	Machala.	Total.
1888.	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*
January	617,381	41,430	54,033	712,834
February	798,561	3,717	5,489	807,767
March	3,112,161	58,984	14,181	3,185,326
April	4,341,891	155,292	134,092	4,631,275
May	4,427,881	411,502	517,964	5,357,347
June	1,735,769	341,327	784,179	2,861,275
July	1,418,911	648,160	1,206,682	3,273,753
August	1,062,881	717,304	902,688	2,782,873
September	833,219	187,031	280,439	1,300,689
October	370,298	197,737	372,478	940,513
November	221,522	180,941	405,791	808,254
December	449,123	148,511	412,568	1,010,202
Total	19,480,598	3,091,926	5,090,604	27,672,128
1889.				
January	1,184,800	118,634	214,999	5,184,831
February	1,814,825	64,941	97,967	2,057,703
March	3,075,318	61,345	61,373	3,198,036
April	3,252,106	168,118	130,835	3,551,059
May	2,801,914	470,054	397,725	3,669,693
June	1,328,214	336,615	434,802	2,099,631
July	724,626	408,838	780,016	1,913,480
August	324,076	469,600	915,379	1,709,135
September	225,286	383,075	604,210	1,212,571
October	227,426	232,097	436,296	885,819
November	499,470	153,944	367,415	1,020,829
December	1,209,451	298,032	293,382	1,800,865
Total	16,737,512	3,165,393	4,734,339	24,637,304
1890.				
January	2,052,400	349,800	268,500	2,670,700
February	1,797,702	116,942	124,781	2,039,425
March	3,696,970	186,435	100,755	4,074,161
April	3,990,819	131,385	371,116	4,493,320
May	4,200,899	404,315	582,785	5,187,999
June	2,166,948	198,176	286,217	2,601,341
July	1,680,566	601,473	1,278,970	3,601,009
August	1,566,596	564,484	1,077,062	3,208,142
September	1,292,377	441,565	651,633	2,385,575
October	1,100,964	944,239	752,011	2,587,214
November	826,705	540,277	739,362	2,106,344
December	538,625	327,475	470,440	1,336,540
Total	25,001,572	4,596,566	6,793,632	36,391,770
1891.				
January	524,237	187,739	188,982	900,858
February	343,548	80,708	148,813	576,059
March	1,263,248	35,149	92,571	1,390,968
April	3,860,536	166,096	155,850	4,183,282
May	4,162,305	408,996	529,291	5,100,592
June	1,370,247	378,538	619,036	2,367,021
July	538,970	344,397	727,400	1,610,767
August	576,104	438,204	865,086	1,880,294
September	482,674	256,233	655,692	1,191,599
October	213,402	162,406	255,893	632,721
November	202,252	140,203	175,352	517,807
December	523,183	89,854	125,627	728,664
Total	15,050,696	2,690,343	4,339,593	21,080,632

Table showing entries of all grades of cacao into Guayaquil during the last fifty-two years.

Year.	Quantity.	Year.	Quantity.
	Quintals.		*Quintals.*
1840	142,669	1867	197,260
1841	114,102	1868	212,355
1842	67,090	1869	173,492
1843	154,634	1870	233,144
1844	85,741	1871	172,422
1845	97,290	1872	187,238
1846	112,020	1873	245,969
1847	120,736	1874	247,493
1848	210,074	1875	103,500
1849	142,347	1876	220,993
1850	110,660	1877	205,307
1851	95,670	1878	103,309
1852	139,655	1879	315,341
1853	132,430	1880	338,802
1854	109,921	1881	223,082
1855	150,897	1882	189,046
1856	133,736	1883	150,105
1857	147,659	1884	180,100
1858	198,187	1885	224,588
1859	136,187	1886	384,760
1860	167,617	1887	334,170
1861	186,781	1888	276,721
1862	160,261	1889	246,373
1863	164,011	1890	363,907
1864	114,506	1891	210,806
1865	142,671	Total	9,511,938
1866	225,077		

Table showing the average price of cacao and bank rate of exchange by months for the past five years.

Month.	Price of cacao.			Premium of exchange.			
	Arriba.	Balao.	Machala.	New York.*	London.†	Paris.†	Hamburg.†
1887.	*Pesos.*	*Pesos.*	*Pesos.*	*Per cent.*	*Per cent.*	*Per cent.*	*Per cent.*
January	18.20	17.00	16.00	72.2	66	65	64
February	18.20	17.00	16.00	70	66	65	64
March	19.00	17.00	16.20	70	66	65	64
April	19.20	18.00	17.00	72.2	65	64	63
May	21.20	19.00	18.00	70	64.2	63.2	62.2
June	25.00	20.00	19.00	67	63.2	62.2	61.2
July	23.20	19.20	18.20	70	63	62	61
August	32.20	19.20	18.20	75	66.2	64.2	63 2
September	23.00	18.20	17.20	70	66	65	64
October	23.00	19.20	17.00	72.2	65.2	64.2	63.2
November	22.00	19.20	18.20	71	65.2	64.2	63
December	18.00	17.80	16.00	71	64	63	62
1888.							
January	18.20	17.20	16.20	72.2	65.2	64.2	61.2
February	18.20	17.20	16.20	71.2	65	63.2	62.2
March	22.20	19.00	18.00	70	62.2	61.2	60
April	23.00	19.20	18.20	67.2	59.2	58	57
May	22.00	18.20	17.20	68.1	60.2	59	58
June	22.00	19.00	18.00	75	67	66	65
July	21.00	19.00	18.00	76	69.2	68	67
August	20.20	18.20	18.00	77	71.2	70.2	69.2

*Sixty days. †Ninety days.

Table showing the average price of cacao and bank rate of exchange, etc.—Continued.

Month.	Price of cacao.			Premium of exchange.			
	Arriba.	Balao.	Machala.	New York.	London.	Paris.	Hamburg.
1888—Continued.	*Pesos.*	*Pesos.*	*Pesos.*	*Per cent.*	*Per cent.*	*Per cent.*	*Per cent.*
September	21.00	18.20	18.00	77	73	72	71
October	21.20	19.20	18.20	78	73	72	71
November	22.20	19.20	18.70	79	70.2	69.2	68.2
December	22.20	19.20	18.00	76	70.2	69.2	68.2
1889.							
January	22.20	19.20	18.20	78.2	74.2	73	72
February	23.20	20.00	19.00	77.2	72.2	71	70
March	23.00	20.00	19.00	75	70	69	68
April	23.00	20.00	19.00	77	72	71	70
May	23.00	20.00	19.00	79.2	73	72	70.2
June	23.00	20.00	19.00	78.2	72.2	71	70
July	24.20	20.20	19.20	83	77.2	76	75
August	25.00	20.20	19.20	73	78	77	75.2
September	25.00	21.20	20.20	85.2	80	76	77.2
October	25.00	21.20	20.20	87	81	80	79
November	23.20	21.00	20.00	87.2	82	80.3	79.2
December	22.00	19.20	18.20	82.2	75	74	72.2
1890.							
January	19.00	18.00	17.20	79	75	73.2	72
February	21.30	19.00	18.00	81	74.2	73	72.2
March	22.00	19.00	18.00	81	74.2	73	72.2
April	23.00	19.20	18.20	74	66.2	65	63.2
May	24.00	20.00	19.00	71.2	63.2	62	60.2
June	23.20	19.20	18.20	70	62.2	61	59.2
July	23.00	19.00	18.00	68	60.2	59	57.2
August	20.20	17.00	16.00	62.2	56.2	55	53.2
September	17.20	15.20	14.20	47.2	41	39.2	38
October	16.00	15.20	15.00	49.2	45	43.2	42
November	16.00	15.20	15.00	53	49	47.2	46
December	16.00	15.00	14.20	63	55.2	53	52.2
1891.							
January	16.00	15.00	14.20	66.2	61	59.2	58
February	16.20	15.20	15.00	70	63.2	62.2	61
March	27.00	20.00	18.20	74.2	66.2	65	63.2
April	27.00	20.00	18.20	75.2	67.2	66	65
May	26.20	19.20	18.20	68.2	60.2	59.2	58.2
June	27.00	19.20	18.20	75	68	66.2	65.2
July	29.00	22.00	19.00	74	68	66.2	65.2
August	29.20	23.20	22.00	78.2	71.2	70.2	69.2
September	27.00	23.00	21.20	80	73.2	72.2	71.2
October	24.20	22.00	20.20	81.2	75	73.2	72
November	24.00	22.00	20.20	84.2	79.2	78	76.2
December	24.20	21.20	20.20	82.2	77	75.2	74

WILLIAM B. SORSBY,
Consul-General.

UNITED STATES CONSULATE-GENERAL,
Guayaquil, May 21, 1892.

No. 144——5.

TRADE OF REVEL.

REPORT BY CONSULAR AGENT VON GLEHN.

I have the honor to transmit to you my annual report for the year 1891.

The statistics just published of the trade of this port for the year show a decrease of about $9,300,000 on imports and of $1,000,000 on exports, or a total decrease of $10,300,000 as compared with the preceding year, a result which was to be expected, when taking into consideration that the entire crops of the southern provinces of Russia were destroyed, causing a famine in that part of Russia during the latter half of the year, which, of course, has reacted on the trade of the whole Empire, of which the statistics give a clear but regrettable evidence. Importers had not only to contend with diminished sales, but also with higher exchange ruling towards the second half of the year, and exports of grain and seeds were entirely checked by the ukases prohibiting all exports of breadstuffs since the famine of the south became the talk of the day.

This naturally caused a fall in the value of the paper currency, *i. e.*, a rise in exchange, which would doubtless have been much more considerable if the imports had kept up on the same level as in previous years. To-day 1 gold ruble is equal to 1.56 rubles in paper currency, while last year at this period it was only 1.35 rubles. Under these circumstances the past year has been one of the worst for the trade of this port for the last twenty years, as imports amount to only about one-third and exports to about three-fourths of what they were in 1880, the year of the highest prosperity this port has had.

The following table shows the total value of imports and exports during the last six years:

Year.	Imports.	Exports.
1886	$21,835,316	$5,051,362
1887	28,634,264	12,625,821
1888	22,072,564	10,124,126
1889	22,707,978	7,317,331
1890	27,170,003	10,103,688
1891	17,903,539	9,187,738

IMPORTS.

Cotton imports from the United States show a decrease of about 51,000,000 pounds as compared with the preceding year and are 70,000,000 pounds behind those of 1887, as the following figures show:

	Pounds.
1887	150,221,376
1888	80,163,180
1889	106,470,288
1890	132,037,524
1891	80,688,456

All imports from the United States came forward in vessels under continental flags, no American vessels having entered or left this port since July, 1886. There arrived direct from the United States in all 11 vessels, of an aggregate tonnage of 12,568 registered tons, against 22 vessels, of 24,585 registered tons, in 1890 and 26 vessels, of 30,676 registered tons, in 1889, from which it appears that the indirect lines of steamers via Hull and Hamburg absorb more and more the carrying trade to this port from the United States.

Table showing the value of imports and whence they originated for the last five years.

Countries.	1887.	1888.	1889.	1890.	1891.
United States	$9,386,743	$5,174,890	$8,199,427	$7,161,877	$3,969,437
Great Britain	8,928,782	10,432,328	8,614,583	9,905,576	6,954,639
Germany	6,502,459	4,055,298	5,874,764	8,655,576	6,281,711
France	2,135,590	4,872	1,968	74,855	180,880
Denmark	923,554	665,008	273,473	210,193	50,167
Netherlands	614,831	636,174	551,697	707,977	312,772
Sweden	280,557	185,692	57,767	131,820	45,760
Norway	100,775	93,575	119,612	101,207	102,785
Spain	98,341	5,525	1,420	.....	3,416
Belgium	10,497	73,412	14,440	21,795	.....
Italy	2,860	20,857	10,680	147,910	1,665
Portugal	.....	.....	367	1,215	190
Brazil	234,004	60,858	.....	.....	.....
Africa, etc	.....	.....	.....	.....	165
Total	29,219,050	21,408,993	23,720,201	27,170,003	17,903,539

Table showing the principal articles imported during the last five years.

Articles.	1887.	1888.	1889.	1890.	1891.
	Pounds.	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*
Cotton	150,221,376	80,532,204	106,470,288	132,037,524	80,688,456
Yarns	3,325,788	2,356,380	1,720,188	1,442,772	859,860
Oil	1,369,548	1,364,904	1,251,864	3,400,956	1,706,508
Salt:					
Foreign	2,090,628	352,188	312,876	418,536	330,372
From the Crimea	43,398,108	30,273,480	56,140,200	57,694,032	42,700,176
Herrings, salted	5,306,112	6,442,344	8,534,196	6,224,400	10,157,868
Wine in casks	390,888	559,296	340,488	341,640	730,584
Fruits	1,084,716	607,140	823,896	2,230,776	2,169,648
Coffee	997,020	1,006,372	775,764	1,824,660	1,236,024
Tea	124,488	210,168	97,200	255,240	204,372
Rice	56,032	116,100	95,796	122,508	160,596
Maize	15,084	.....	540	.....	.....
Coal and coke	110,186,892	120,885,660	136,854,504	110,312,812	124,060,608
Machinery	10,058,004	8,294,292	8,182,764	11,968,776	8,594,712
Iron and steel goods	3,619,772	3,392,568	3,116,700	3,578,904	3,144,636
Drugs	16,489,584	15,459,120	11,515,968	17,179,740	13,622,580
Metals	29,530,656	12,537,828	14,968,872	11,999,424	9,959,220

EXPORTS.

There was no export trade from this port to the United States direct or indirect.

Table showing the value of exports from Revel and their destinations for the last five years.

Countries.	1887.	1888.	1889.	1890.	1891.
Great Britain	$5,418,589	$4,256,933	$4,467,235	$4,755,765	$4,563,830
Germany	1,690,183	1,700,542	1,370,176	1,356,956	1,641,930
Sweden	1,330,262	601,237	350,436	546,350	69,305
Netherlands	1,283,610	1,294,025	1,582,288	1,769,542	1,613,115
France	1,257,922	1,136,604	596,748	842,378	849,565
Denmark	312,196	397,603	420,169	506,715	344,795
Belgium	292,663	643,621	193,894	325,088	62,759
Norway	43,360	99,240	10,367	.....	41,610
Portugal, etc	27,907	34,965	.....	892	830
Total	11,656,693	10,165,371	8,991,266	10,103,683	9,187,738

Table showing the principal articles exported during the last five years.

Articles.	1887.	1888.	1889.	1890.	1891.
Spirits.....gallons...	6,102,681	4,894,096	3,921,680	4,419,537	1,688,846
Oats.....bushels...	7,555,914	8,961,648	7,663,776	4,518,423	3,390,485
Rye.....do.....	2,929,329	1,745,496	1,058,463	1,528,704	1,446,593
Wheat.....do.....	1,215,370	500,200	1,363,610	4,166,765	2,366,237
Buckwheat.....do.....	332,900	216,550	88,860	43,910	3,115
Barley.....do.....	207,120	844,248	1,018,720	918,184	600,784
Linseed.....do.....	1,210,446	1,311,264	1,140,552	1,551,510	674,500
Oilcakes.....pounds...	15,871,608	11,243,844	10,745,028	10,147,860	7,119,324
Flax.....do.....	44,449,992	37,526,616	29,333,556	37,227,816	43,637,512
Tow.....do.....	8,213,904	4,812,948	2,305,296	2,901,492	4,426,488
Mineral oil.....do.....	4,706,280	5,711,220	2,892,168	2,954,376	5,397,840
Deals.....number...	63,048	102,081	140,564	41,192	45,025

NAVIGATION.

This port was closed by ice from the beginning of February till the end of March, when a passage was cut through the ice in order to enable several steamers to enter. During this period of blockade all steamers destined for this port had to discharge at Baltic Port, which is the outer port of this harbor and was open to vessels about a month sooner than Revel.

The following table shows the number of vessels entered at and cleared from this port, as well as their tonnage, for the last five years:

Year.	Entered.		Cleared.	
	No.	Tons.	No.	Tons.
1887	802	412,196	799	411,371
1888	651	345,636	645	338,027
1889	554	295,667	558	303,621
1890	607	314,148	613	318,220
1891	1,446	339,522	1,430	335,279

E. VON GLEHN,
Consular Agent.

UNITED STATES CONSULAR AGENCY,
Revel, April 28, 1892.

SULPHURING HOPS IN GERMANY.

TRANSMITTED BY CONSUL-GENERAL EDWARDS, OF BERLIN.

[Translation from the Berlin Staatsbürger Zeitung of May 14, 1892.]

The greatest hop market of Germany is Nuremberg. The vicinity of Nuremberg, and especially the villages of Spalt, Hersbruck, Lauf, Langenzau, Neustadt, and Altdorf, produce the finest hops in Germany. Hop culture is there so extensive that at times one travels on the railway for half an hour without seeing any crop except hops. From Nuremberg breweries in every part of Germany are supplied with good Bavarian hops, chiefly indirectly through hop dealers. The best sorts are, indeed, often purchased by the breweries directly from the producers. This is, however, not always possible, and the poor peasants are forced to bring their wares to the Nuremberg market and sell them there to the hop dealers. There are in Nuremberg about 286 hop dealers, of whom only about 6 are Christians, and these, in their business maxims, do not differ in the least from their Jewish competitors. Naturally much money is made in the hop trade. In what a shameless way, however, both the small producers and the brewers are swindled by the hop dealers is probably unknown to many a brewer who thinks himself a sharp business man, and this is why we here reveal the manipulations of dealers, as explained to us by an expert, in the interest of brewers and the beer-drinking public.

The hops, which naturally have a reddish or greenish yellow color, have the characteristic that, when not sufficiently dried, in moist weather they very quickly become heated and spoiled, taking a brown color and becoming covered with mold. Now, the wisest thing producers could do—and they would also get better prices—would be to bring their hops to market dry. Usually, however, the producers have no drying apparatus of their own, although every little village could supply itself with a drying house for bad autumns. For conserving moist wares sulphur is used. In the one hundred and forty-two hop-sulphuring kilns in Nuremberg 1,000 centners of sulphur are used annually. If the hops were properly dried down so that they contained not more than 10 or 12 per cent of water, they would never become heated when kept in a dry place. By sulphuring, however, the water component can be raised to 22 per cent. Naturally the dealer prefers to sulphur the hops "for their better conservation," and in this way to be able to sell to the brewer 20 per cent of water. The sulphurer has, however, still other fraudulent purposes, which we will now explain by an example.

Let us go in the fall to the corn market in Nuremberg when it has rained during the night and continues to rain in the daytime. In the forenoon the peasants unload their wet wares. If, then, in the afternoon one sticks his hand into such a wet bag, it actually burns him. The dealer naturally knows what will happen, and thereon he builds his plan. The custom has grown up that on each market day only a certain number of dealers buy, each individual dealer having his turn.

In the forenoon the dealer offers the peasant a very low price; naturally the peasant refuses. But of all the hop dealers standing near not one cares for the peasant and offers him more. The dealers who are prevented by custom from buying on that market day are nevertheless all on the ground. In the meanwhile noon comes and the dealers go to dinner. For the poor peasant everything is getting worse, his wares are growing warmer, and, unless he has the necessary drying appliances, in a couple of days he may as well throw his wares upon the dunghill. At last the peasant is glad when the dealer takes the wares at a spot price. Now what happens with such hops? They go to the magazine of the dealer, where, half burnt and moldy, they are cooled, and then, just as they are, treated to a plentiful dose of sulphuric acid. Thereupon they look as though freshly picked, and are sent to the brewer in the north as ff., or *prima prima*, or choice, the brewer congratulating himself on the beautiful

hops he has obtained. Now, perhaps, the sulphur is not directly dangerous to health, but that from such wares no good beer can be made is self-evident.

Now, one may rightly ask, why, then, does the brewer buy sulphured hops, and why does he not refuse to accept wares having a diminished value? There are two important reasons for this. First, many brewers do not possess the technical knowledge necessary in order to recognize as reduced in value and half spoiled the hops made outwardly beautiful by sulphuring. We would like to advise brewers who purchase *prima* wares and nevertheless fail to make good beer to give their hops oftener for test to men having good technical educations. We can assure the brewer who in this way has fallen behind that the dealer will pay him any damages he may demand. Often, however, the brewer—especially the smaller brewer—is dependent upon the hop dealer because he owes him money. It is, therefore, the object of every hop dealer to get the brewery owner in his hand by lending him money upon security subject to draft or in some other way. When this is, however, accomplished the independence of the brewer is at an end. He must take from the hop dealer even the worst wares. Here ends the brewery and begins the beer-slop factory.

To the question, how is this evil to be remedied? we refer to a leading article in No. 367A, of August 9, 1891, entitled "Wine-Dressers' Unions in the Valley of the Ahr." There, too, the wine dealers, and especially those belonging to "the chosen race," held the wine trade in their hands in such a way that the wine-dressers became continually poorer while the former became continually richer. There, too, the wine-dressers, unless they wished to starve with their families, were compelled to sell for spot prices offered by the ring of wine dealers. There, at length, manhood asserted itself by calling into existence a union of Walportsheim wine-dressers, which was very soon joined by seventy-two producers out of a total of seventy-eight. "One for all and all for one" was the principle upon which they worked, and the result exceeded all expectations. Should not the hop producers adopt this idea? Should they do this, and we certainly hope that they will, they would do well to accept as their pattern the statutes of the Walportsheimer Union of Wine-Dressers, which would be gladly sent to them.

"One for all and all for one"—with this idea they must begin their war with the hop dealers, and the result will be the victory of the producers.

AUSTRALIAN PEARL-BUTTON SHELLS.

REPORT BY CONSUL-GENERAL WALLACE, OF MELBOURNE.

In reply to instruction, in the interest of pearl-button manufacturers in the United States, I have the honor to forward herewith a short report on the Australian pearl-button shell. My excuse for not supplying fuller statistics is that the pearl-shell fisheries are 2,000 miles from this port. I may, however, be able to supplement the report after a time.

The merchants of the colony of Western Australia who deal in pearl shells are Messrs. W. D. Moore and Lilly & Holdsworth, of Perth, and Capt. Riddell, of Freemantle.

The pearl shells found on these coasts suitable for button manufacturing are found in the neighborhood of Shanks Bay, but at the present time these grounds are closed for a period of four years, owing to the excessive fishing having somewhat exhausted the supply. These shells realize from £20 to £40 ($97.33 to $194.66) per ton in the market, according to quality and the state of the market.

There is another fishery in the northwest, at Roebuck Bay, but the shells there are very large, from 1½ to 3 pounds each, and are not used for button-making. These shells realize from £7 to £10 ($34.06½ to $48.66½) per cwt. (112 pounds).

The export duty on pearl shells is £2 ($9.73) per ton.

There has been some fishing and prospecting for pearl shells off the northern coast of South Australia, but so far, the information at hand would seem to indicate, with but indifferent success.

GEO. H. WALLACE,
Consul-General.

UNITED STATES CONSULATE-GENERAL,
Melbourne, June 27, 1892.

TRADE AND COMMERCE OF HIOGO.

REPORT BY CONSUL SMITHERS.

The year 1891 was not a profitable one to the merchants of this consular district. At the opening of the year the market was overstocked with imported goods, upon which, in many instances, a heavy loss was sustained by reason of the continued fall in exchange. In the principal article of the export trade, that of tea, the high price which was maintained during the firing season and the failure to realize corresponding prices in the United States was very disastrous and caused the failure of one of the principal exporters. The imports at Hiogo for 1891 amounted in value to $21,326,207 (United States gold) and the exports to $16,263,811, being a falling off in imports, as compared with 1890, of $8,084,149 and an increase in exports of $1,798,933.

TRADE WITH THE UNITED STATES.

Imports.—The imports from the United States amounted in value to $2,291,172, which is a decrease, as compared with 1890, of $806,162. This large decrease is owing to a diminution in kerosene importations, the returns showing that 15,711,250 gallons were imported during the year, against 21,760,280 gallons in 1890. It would be misleading, however, to suppose that this large falling off in kerosene imports indicates a decline in popularity of the American oil. In 1890 the shipments were far in excess of the demand, 750,000 cases having been carried over into the new year. American oil had to face serious opposition from the Russian product during the year.

In 1890 the imports into Japan of Russian oil amounted to 3,840,670 gallons and in 1891 to 7,978,180 gallons, an increase of more than 100 per cent. American oil has still the preference over the Russian product, and at an increased cost of from 5 to 6 cents a case; but to retain for the United States the ascendency in the markets of the world in this most important staple it would seem to be necessary that the refiners should put the price at the same figures as the Russian oil.

There was a large increase in importation of American raw cotton during the year, 6,218,697 pounds having been imported, valued at $901,852.41. The present unprecedentedly low price of American cotton has undoubtedly increased the demand. Superior grades of cotton yarn are manufactured at the Osaka and other cotton mills in Japan by mixing one-half of the American with a like quantity of Indian cotton. Greater attention should be paid by American shippers to baling the cotton, so as to prevent waste. There is a marked contrast in the way the American and the Indian cotton is baled, to the detriment of the former.

Exports.—The exports to the United States amounted in value to $4,371,374, an increase over 1890 of $179,215. Tea, crude camphor, and rice are the principal exports.

NAVIGATION.

Two hundred and sixty steamers from foreign countries, of an aggregate tonnage of 304,549 tons, entered during the year, and 31 sailing vessels. Of the latter 7 were under the American flag. In the coastwise trade, in which foreign and Japanese steamers are engaged, 556 steamers entered, with an aggregate tonnage of 824,018 tons, and 7 sailing vessels.

HEALTH AT HIOGO AND OSAKA.

While cholera has not existed in an epidemic form in this consular district during the year, it has prevailed in some of the central and northern provinces to a considerable extent, over nine thousand deaths having been reported. Until better sanitary regulations are adopted Japan must continue to suffer from this terrible malady.

E. J. SMITHERS,
Consul.

UNITED STATES CONSULATE,
Osaka and Hiogo, May 5, 1892.

PEANUT REFUSE.

REPORT BY CONSUL-GENERAL EDWARDS, OF BERLIN.

I have the honor to invite attention to the fact that the imperial German health authorities have discovered that the refuse left after the oil has been extracted from peanuts contains 50 per cent of albumen.

This discovery, which may prove of interest to the peanut industry of the United States, was made during some recent experiments which were being conducted by the imperial German health authorities with a view to ascertain whether a healthy bread could not be made of a mixture of rye flour and peanuts in some form.

W. H. EDWARDS,
Consul-General.

UNITED STATES CONSULATE-GENERAL,
Berlin, July 17, 1892.

PEOPLE, INDUSTRIES, AND TRADE OF BRITISH GUIANA.

REPORT BY CONSUL CARROLL, OF DEMERARA.

AREA AND INHABITANTS.

The area or extent of the colony of British Guiana is variously estimated, some placing it at 60,000 square miles, others at 100,000 square miles, and others again at a much higher figure than the latter, while others place it at between 60,000 and 100,000 square miles; but, as the boundaries between the colony, Brazil, and Venezuela appear to be undetermined, there is ample room for even more estimates. Should those who estimate it at 100,000 square miles be correct, then the colony is larger than Great Britain. The interior is a vast wilderness of forest, mountain, and river, inhabited by several tribes of Indians, who are practically independent, and are estimated to number 10,000.

The inhabitants of British Guiana consist of representatives of all the principal races except the Polynesian. The African predominates, with 115,588, closely followed by the East Indian coolie, with 105,463. The aboriginal Indians number 7,463 in the settlements, while the census puts down an estimate of 10,000 for those living beyond the reach of the enumerators. The Chinese number 3,714, and are steadily decreasing. The Europeans only reach a total of 16,724, of whom 12,166 are Portuguese; while the mixed races—mostly colored, the offspring of the African and European—number 29,029.

The sugar plantations are generally conducted by East Indian coolies, the creole or native colored man not being depended upon to any extent on account, it is said, of his distaste for continuous work. The colored man generally lives in a village, where he owns a piece of land, in the center of which he builds his house, and around and to the rear of the same he cultivates his provisions when so inclined. Nearly all the colored villages, however, I am told, are on the verge of ruin, very few of the people attempting to cultivate their grounds, and those who do are in constant dread of the depredations of the idlers. In order to obtain a bare living, the villager works one or two days on a neighboring plantation, while the few industrious people grow plantains, sweet potatoes, cassava, and other vegetables for their own use and for sale. Fruit could be grown in abundance, but, unfortunately, the number of idlers is so great that it is understood that very little is allowed to ripen, it being stolen before the owner thinks it fit to gather. The inhabitants of all the villages number 125,757, the most populous of these being Plaisance, on the east coast of Demerara, containing 4,705 people. There can be no doubt that the inhabitants of the villages could attain a fair measure of prosperity if they would keep their provision grounds in cultivation, but, as it is, I am informed they are often destitute and half starved. The urban population of the colony numbers 62,079,

being over one-fifth of the whole. There are only two towns—Georgetown, the capital of Demerara and the colony of British Guiana, and New Amsterdam, the capital of Berbice, Essequebo having no capital. New Amsterdam has 8,903, and Georgetown 53,176, inhabitants.

The capital is a city with a mayor and council, two cathedrals (Anglican and Roman Catholic), with their respective bishops, a residence for the governor, and extensive public buildings. The city is handsome, with wide streets laid out at right angles, many of the houses being surrounded by trees and large gardens. The palm is most conspicuous and abundant. Many of the houses have towers, from which the buildings appear as if in a forest. The city stands at the mouth of the Demerara River, on the eastern bank, the sea being to the north and the river, which is the harbor for shipping, on the west. It covers an area of nearly 4 square miles, nearly every street being straight and continuous the entire length and breadth of the city. Water street, which is the business thoroughfare and parallel with the river, is thronged with a motly crowd of half-clad Africans, picturesque Hindoo coolies, quiet Chinese storekeepers, and here and there a naked Indian, while Portuguese, Scotch, English, and French help to make up an interesting spectacle to a stranger.

BUSINESS AND AGRICULTURE.

The mercantile class is made up generally of Europeans, the Portuguese having the greater portion of the retail trade in their hands. Small provision stores are at almost every street corner in the capital, while every village and plantation is dotted with them. In these are sold breadstuffs, salt meat and fish, and other household necessaries, almost all of which are American. Even corn, which could easily be grown in the colony and of which two or three crops could be gathered annually, is imported to a considerable extent. The colony is progressive to some extent, but not to that degree which could naturally be expected. No doubt this is due to its position in the tropics. Up to the present no suitable agricultural people have settled in the colony, as everything outside the sugar plantations is accomplished in the most primitive manner. Even on these, on account of the land being in most cases below the level of the highest tides, the fields are cut up into small beds, surrounded by open drains, so that neither plows nor other machinery can be utilized, the consequence being that they are cultivated with fork and shovel. For the same reason only large capitalists can carry on the sugar plantations, as the cost of drainage—all carried out by manual labor—is enormous. There are also the sea dam and a public road to be kept up by the proprietor, which cost thousands of dollars annually. The rainfall being about 80 inches, with no natural drainage except at low water, pumping engines have been necessary on many of the plantations, which is another burden on the planter. All these, I am told, could be endured if sugar was bringing anything like a reasonable price; but during the last few years the market, it is said, has been so depressed that the profits have

sunk to little or nothing. Still, this class is rich and seems very prosperous. It is not, in view of the above, surprising, they say, that the planter is not so enterprising as could be wished. Capital, I am told, is difficult to procure. The resources of the colony, however, would, if developed, soon put matters on a different footing. Sugar could be made a secondary consideration. Magnificent timber covers thousands of square miles of the interior, some of the woods being very handsome and suitable for the best cabinet use, while others are particularly suitable for public works, such as dock gates, piles, etc., as they are very durable and are rarely attacked by worms. To procure timber in quantity it is only necessary that the rapids of the great rivers should be overcome in some way, when a wonderful development would probably take place. Gold, too, has been found in so many different places that it is believed in a few years the colony will be worthy of the name of El Dorado, which was given to it by the Spaniards three centuries ago. Diamonds have also been found, while iron ore is plentiful, and there is great probability that copper and silver will be discovered.

Its capabilities in the way of agricultural produce are enormous. There is plenty of good land suitable for cocoa, coffee, and cotton, while rice, which is at present imported from India in very large quantities, could be grown to perfection, the quality being equal to that of South Carolina or Georgia. Cotton and coffee were the staple products at the beginning of this century, but, having been replaced by sugar when this was the most profitable, the planters are naturally averse to abandoning its cultivation, together with all the valuable machinery in connection therewith, notwithstanding their wailing. Attempts have been made to introduce the culture of the banana for the American market, but at present the matter may be said to be in abeyance.

CLIMATE.

The colony has long suffered from false reports as to its healthfulness, and this has had a great deal to do with its progress and the sparseness of population. Yellow fever is rare, only one epidemic of that disease occurring during the last twenty years. The principal diseases are malarial fevers and dysentery. Smallpox, scarlet fever, and a host of other fevers common in temperate climates are unknown here, while those suffering from pulmonary diseases are benefited by a residence in the colony, as are also those who suffer from rheumatism. One rheumatic of years' standing is known to have had complete immunity from the disease during his residence in the colony.

SUGAR ESTATES.

The inhabited portion of the colony consists of a strip of alluvial soil, very fertile, extending along the coast and for comparatively short distances up the great rivers, rarely reaching more than 3 miles inland, and, indeed, seldom that. Upon this narrow strip about a hundred sugar plantations are situated, facing the coast or river, from half a mile to 2 miles in breadth, while the cultivation extends back a distance of 2 or 3 miles. On

these plantations sugar, the staple product of the colony, is produced, the average annual export being about 130,000 hogsheads. In 1890, however, on account of the excessive rainfall, it only amounted to 117,204 hogsheads; but 1891 shows an increase to 116,968 tons 12 cwts. 1 quarter. Besides sugar, the plantations produce rum and molasses, these amounting in 1891 to 102,101⅓ puncheons of the former and 14,311 casks of the latter. The plantations in question are generally in the hands of English capitalists. They are worked by coolie and colored labor, the number of laborers on all being 90,492, one-fourth thereof being colored. The greatest number on any one plantation is 2,171. Besides the resident laborers on the plantations, the colored people who reside in villages, formerly plantations, which intersperse the same, occasionally labor thereon; but they can not be depended upon for anything approximating regular work. The East Indian coolie is conveyed to the colony at the expense of the Government and the planters under a contract for five years' industrial service and five years' residence in the colony, after which he is entitled to claim a passage to his home. Very elaborate precautions are taken to prevent any abuse in connection with the coolie immigration system, the coolie being protected by law, while at the same time bound to labor for the current rates of wages—about 50 cents per task, which is generally a day's work, although it is understood a strong man can accomplish more if he sees fit. The coolie is provided with a cottage, food, and medical attendance in the hospital when ill, which each plantation is required to provide, and, all things considered, he is made very comfortable. On account of their frugal habits, they, as a rule, save money, few caring to claim the return passage until they have amassed from $500 to $1,000. Some leave the plantations and open stores or become cattle farmers, for which latter they seem to be peculiarly adapted. The coolie is not so strong as the colored laborer, but it is understood that, being more willing and regular—even aside from his contract—he is generally liked much better than the latter.

Table showing the quantity and value of sugar exported during each year from 1884 to 1891.

Year.	Quantity.			Value.	Proportion shipped to the United States.
	Tons.	*cwts.*	*qrs.*		
1884	125,321	18	2	$8,750,225.30	Less than one-sixth.
1885	96,058	12	1	6,647,255.95	About seven-eighteenths.
1886	111,855	1	2	6,907,156.36	About one-fifth.
1887	134,874	8	1	8,633,461.00	About three-sevenths.
1888	108,122	3	2	7,712,114.47	Nearly one-half.
1889	115,587	2	1	9,187,891.14	Do.
1890	105,483	17	1	6,898,644.61	About four-sevenths.
1891	116,968	12	1	7,981,158.33	About two-thirds.

NOTE.—The ton is of 2,240 pounds.

GOLD AND GOLD-MINING.

After sugar, the second product of consequence, which bids fair to become the first in the near future, is gold, the third being timber. Gold

has been obtained, with minor exceptions, thus far from placer washing. Quartz-mining, however, is under consideration on a large scale, and is even now in operation. It is only recently—about seven years ago—that this metal was found in any great quantity; search, however, has been made for it nearly as far back as three hundred years. Latterly, notwithstanding the difficulties of traveling to and in the interior, the output has been steadily increasing. In 1889 the export amounted to 29,327 ounces, valued at $545,-482.20; this was more than doubled in 1890, the amount being 62,615 ounces and the value $1,124,755.20, while during 1891 it increased to 101,-298.1 ounces, the value being $1,801,389. The labor employed in gold-washing is, with rare exceptions, colored, the wages of 64 cents per day and rations inducing this race to engage in the enterprise. When, however, they discover that they have to work daily, it is understood they often endeavor to break their contract or desert. The number of persons engaged in the gold and timber industries is said to be 6,646, those on the River Essequebo beyond Bartica (the principal gold district) being nearly two-thirds of the total. The other gold districts are the Puruni (a tributary of the Masaruni), the Barima and Barama in the northwest, and the upper Demerara. The difficulties, among others, in the way of gold-seekers are a series of rapids by which every great river in the colony is obstructed, which are dangerous without proper river pilots, who are generally Indians. Gold expeditions, in consequence, are expensive, as everything required must be carried in open boats, the journey often consuming three weeks, and are usually cut off from communication with the coast for two or three months.

The following table shows the amount and value of native gold exported annually since 1885, prior to which no record thereof was kept:

Year.	Quantity.	Value.
	Ounces.	
1885	939⅔	$15,596.00
1886	6,518⅘	112,042.48
1887	11,906⅗	213,252.41
1888	14,570⅓	266,718.96
1889	28,282⅙	524,325.05
1890	62,615⅔	1,124,759.72
1891	101,298⅒	1,801,389.00

WOODS OF BRITISH GUIANA.

Timber was shipped in 1890 to the extent of 332,098 cubic feet, amounting in value to $110,000; in 1891 312,801 cubic feet, valued at $96,329.62. This industry could be developed to almost any extent if the difficulty of the rapids was overcome, so that timber could be easily brought down from the interior. At present little or nothing can be done beyond the rapids, so that only a very small portion of the country can be profitably worked. Another product of the forest is "ballata," a kind of gutta-percha, which was exported in 1890 to the amount of 226,809 pounds. Shingles, firewood, and charcoal are also exported to a slight extent, principally to Barbados.

The forests embrace a great many species of trees. The varieties of lumber are, as a result, numerous in color—from dark red to almost pure white—and in specific gravity from nearly double that of water to less than half that of the standard liquid. The principal building timbers are green heart, mora, and wallaba. The first is a most valuable wood, being classed with teak in the regulations of Lloyd's, either one of which may be used exclusively in the boundary planks of weather decks, while its durable qualities are placed on a level with oak, only teak coming before it. It is heavy, very close grained, gray with a greenish cast, and may be obtained 50 or more feet in length and squaring 12 to 18 inches. Under water and in the tropics it is superior to all other timbers, house frames a hundred years old having been found still unperforated by worms. The mora is not quite so close grained as green heart, but it is classed with it at Lloyd's, and is almost equally durable. Its color is reddish, and it may be obtained equally as large as green heart. Wallaba is a dark red wood, with an unpleasant odor when new, very durable, but not obtainable in such large-sized logs as those just adverted to. Being easily split, it is commonly used for making shingles, palings, cask and vat staves, etc. On account of its color and smell, it can not be used for rum puncheons, but after a little use water makes no impression upon it. Other timbers are particularly suited for special purposes, such as that of the bullet tree, which was formerly considered the only timber fit to be used for the arms and shafts of windmills. Then there is the silver bally, which is light and suitable for boat-building, from its containing a bitter principle obnoxious to worms and barnacles.

As to the woods suitable for furniture, of which there are about a hundred different kinds, these will no doubt be appreciated in other parts of the world when known a little better than at present. The native cedar (*Cedrela*), which is quite different from the timber of trees of the pine family, is very useful for wardrobes and cabinets, where its scent tends to keep away insects. Mahogany is not native to the colony, but the wood called Guiana mahogany is that of the *carapa*, commonly known as crab wood. It is not so dark in color or as hard in texture as mahogany, and, being more easily worked, is used for all kinds of furniture. Letterwood is perhaps one of the prettiest, but, as the peculiar dark marks are only found in the heart thereof, only small logs can be obtained, rarely exceeding 6 inches in diameter and more being only 4 or 5. Purpleheart is unique in being of a pretty violet color when fresh or new, which, however, turns to a dark brown after being worked up. If it were possible to prevent this change, it would be a most beautiful wood, but even as it is the furniture made from it exactly resembles that of rosewood. To enumerate all the valuable furniture woods would take up too much space, and I therefore inclose a printed list of a collection made in 1878 for the Paris Exposition. I may mention, however, that every color known is represented, from almost black, through browns and reds to deep and pale yellow, to almost white. They are, however, curiously free from irregular veining and knots, the marks being almost uniform and in parallel

lines; nevertheless, these are by no means wanting in beauty. For paneling nothing can excel the nearly black wamara, contrasted with the pale green heart or the lighter and more easily worked, almost white simarupa. At present the demand is so limited that many of the fancy woods are difficult to procure, the woodcutters looking only for such timber as they know will command a market. If, however, a market was opened, these could be collected as easily as green heart, mora, and wallaba are at present.

WOODS OF BRITISH GUIANA.

[Collected for the Government by Michael McTurk for the local and Paris international exhibitions, 1878.]

(1) Souari (*Caryocar tomentosum*, Dec.), from the Moraballi Creek, Essequebo River. Souari thrives best and seems to attain to its largest size on the hills composed of a stiff, yellowish clay, mixed with a gravelly kind of stone resembling oxide of iron. The trees are plentiful on the Essequebo and seldom very far from a creek or the main river. Their average height is about 90 feet, and the timber can easily be got to square 24 inches; it is very tough and crossgrained. The trunks of the trees are seldom used, but the roots make excellent floors and futtocks for shipbuilding, and can be had sufficiently large to timber a vessel of large size. The souari nut (butternut), well known in the colony, is the fruit of this tree. The nuts, three or four in number, grow inclosed in a pulpy substance, or fruit, which, before it drops from the tree, greatly resembles in size, shape, and color the mammee apple (*Mammea americana*, Lin.).

(2) Determa, from the Moraballi Creek, Essequebo River. Determa grows best on clayey, gravelly soil, and is more plentiful on the Moraballi Creek than any other part of the colony below the rapids that I am aware of. The average height is about 100 feet, and it can be had to square up to 30 inches. This wood is of a color resembling cedar, and is used for planking boats, in the construction of railway carriages, and for many other purposes where a light and strong wood is required. Determa is also used for the masts and spars of vessels; the largest spars for these purposes procurable in the colony are of this wood, from 70 to 90 feet long and 14 inches in diameter at the smallest end. I have seen a log of this timber 42 inches square.

(3) Kabukalli, from the Moraballi Creek, Essequebo River. This tree is plentiful all over the colony and thrives best in loose, sandy soil. Kabukalli is one of our tallest forest trees and grows very straight; its average height is about 120 feet, and it can be had to square up to 30 inches free of sap. Kabukalli is used in boat building, and for timber is little inferior to mora. This wood has a very unpleasant smell and is disliked by worms. The Indians living in the wet savannahs or where the rivers are free of bush to form a shade prefer canoes made of this wood to any other, as they will not split from exposure to the sun. A gelatinous substance forms on the stump after cutting down a kabukalli tree; it has a disagreeable smell and never hardens. The specific gravity of this wood, as given in a letter by John F. Bourne, esq., the then civil engineer of the colony, to J. Brumell, esq., secretary to the committee for the exhibition of 1862, was 1.154, water being 1.

(4) Tataboo, from the Moraballi Creek, Essequebo River. The tree from which the samples were cut was 104 feet high. Tataboo grows in sandy soil and is not a very common wood. The average height of these trees is about 80 feet. The wood is dark colored, heavy, and hard and well adapted for mill-bed timbers; it is also used in boat-building, house-framing, etc. Tataboo can be had to square up to 22 inches free of sap.

(5) Mamoori-balli, from the Moraballi Creek, Essequebo River. This tree is plentiful in Essequebo and grows best in sandy soil. The average height is about 70 feet, and it can be had to square 16 inches. The wood is tough and hard, and is suitable for house-framing and other work where it will not be exposed to the weather.

(6) Pakoorie, from the Itoori-bisci Creek, Essequebo River. This tree is plentiful on the Itoori-bisci Creek, and generally throughout the country of Essequebo; it thrives best in loose,

sandy soil. The average height is about 80 feet, but it is a tree the trunk of which is very large compared with its height; it can be had to square up to 36 inches free of sap. When arrived at maturity this is a very durable wood, and is used for house-framing and many other purposes. The tree produces an edible fruit of the size and color of a large orange and a yellow sappy gum that is considered useless.

(7) Waibaima, from the Moraballi Creek, Essequebo River. This tree is a species of cirouaballi or siruaballi (*Nectandra* or *Oreodaphne*). The wood has a strong aromatic scent and bitter taste, and is about the best wood in the colony for planking vessels. The trees are numerous on the Essequebo and Demerara rivers. Their average height is about 90 feet, and, as there is little or no sap, the timber can be had to square a large size—20 to 28 inches. For planking and all other purposes of shipbuilding for which green heart is used I think this wood is superior and deserves to be classed among the first-class woods at Lloyd's for shipbuilding.

(8) Kooroo-balli, or trysil, from the Moraballi Creek, Essequebo River, where this tree grows plentifully. The average height of the trees in the forest on the upper parts of the river is about 60 feet. On the coast lands and in the swamps back of the estates, where large quantities of it are cut for firewood, it does not grow so large; it can be had to square 10 inches free of sap, and is a dark, close-grained wood suitable for making furniture. The bark of the kooroo-balli is used by the Indians in cases of dysentery.

(9) Itikiboura-balli (*Machærium?*), from the Moraballi Creek, Essequebo River. Itikiboura-balli grows in clay soil and on the islands in the rapids of the Essequebo. It is comparatively a rare tree below the rapids, and does not attain to an average height of more than 70 feet. The sap wood is white, and its junction with the heart, or *tacouba*, which is of a deep brown, almost black, color, is sharply defined. It can be had to square up to 15 inches free of sap, and is used for making articles of furniture and walking sticks. Itikiboura-balli is one of the heaviest and closest-grained woods in the colony.

(10) Seebadani, from the Moraballi Creek, Essequebo River. This tree grows in clay and sandy soil, and has an average height of 90 feet. The wood is used for framing purposes, and can be had in large quantities. It will square up to 20 inches, and has very little sap.

(11) Wallaba, or Bimiti-wallaba (*Eperua falcata*, Aubl.), from the Moraballi Creek, Essequebo River. This wallaba grows in loose, sandy soil over extensive tracts of country, and is a wood known to every one in the colony. There are four varieties of this tree, locally known as Bimiti-wallaba, Itoori wallaba, Karabimiti wallaba, and Sare-bebe, meaning humming bird, baboon, red humming bird, and water wallaba. The first two grow on loose, sandy soil and the Karabimiti wallaba on clay near the river banks. Sare-bebe grows in the water at the edge of the river. The last two are never used. From the Bimiti and Itoori wallaba frames for houses are made, vat staves, paling staves, and shingles, both for colonial use and for export to the neighboring colonies. These trees are all plentiful, and have an average height of 80 feet, and can be had to square 20 inches free of sap. The scraped root of the Itoori wallaba is used by the Indians as a cure for toothache.

(12) Bartaballi (*Achras mammosa*, Bonpl., *Lucuma Bonplandii*, H. B. K.), from the Moraballi Creek, Essequebo River. Bartaballi grows on clay and sandy soils, and is found plentifully up the Essequebo and Demerara rivers. The tree averages a height of about 90 feet, and can be had to square up to 20 inches free of sap. The wood is close grained, light, and of a pale-brown color, and is useful for making tables and other articles of furniture and for partition boards, doors, etc., for houses. This tree produces a milky juice somewhat similar to that of the burueh, or bullet tree (No. 15), but of a sticky nature. Its fruit is one of the best produced by any of our forest trees and is eagerly sought for by the Indians during its season (about the month of April), when, with characteristic carelessness, the trees are cut down in large numbers for their fruit. The specific gravity of this wood, according to Mr. Bourne, is 0.893.

(13) Itoori wallaba. (See No. 11.)

(14) Tawaronero, or bastard bullet tree (*Humirium floribundam*, Mart.). This tree is plentiful throughout the colony, and grows on sandy soil and near to, but not in, the swamps. The average height is about 90 feet, and it can be had to square 20 inches free of sap. The timber is useful for framing houses, wheel spokes, and many other purposes, and where small-sized timber is required is superior to green heart. The tree produces an edible fruit about the size of a grape. At the expiration of a week or ten days after cutting away the bark from the stem of these trees a minute fungus emitting an agreeable perfume grows upon them; this is scraped off and used by the Indians for scenting their hair oil. Tawaronero produces a gum similar to the bullet tree, but in much smaller quantity.

(15) Bullet tree, or burueh (*Sapota Mulleri*, Miq., or *Mimusops*, sp. ?), from the Moraballi Creek, Essequebo River. This tree grows plentifully, especially in Berbice, where it may be found 5 feet in diameter. Its average height is about 100 feet, and it can be had to square 42 inches free of sap. During the time that windmills were used in the colony the bullet tree was considered to be the best wood for the arms of a windmill. The gum known as ballata is produced by this tree. The wood is dark red, close grained, and solid and, when free of sap, most durable. During the time that the fruit is ripe many of the trees are cut down. The fruit resembles the well-known sapodilla in taste and is about the size of a large English cherry; from the seeds oil can be extracted. The bark of the bullet tree is used medicinally by the Indians in the form of a clyster for a disease called "kaina-kuhu," or Carabisci sick, and occasionally as an emetic.

(16) Fukadie, from the Moraballi Creek, Essequebo River. Fukadie grows on sandy soil. Its average height is about 80 feet, and it can be had to square 16 inches free of sap. It is used for house-framing and is a durable wood for indoor work. This tree is very plentiful on the Itoori-bisci Creek and generally in Essequebo.

(17) Karahura, from the Moraballi Creek, Essequebo River. Karahura grows generally throughout the colony in dry places. It is one of the lightest of colonial woods and is only fit for partition boards and other indoor work of a similar nature. It is used by the Indians for making canoes. Its average height is 80 feet, and it can be had to square 30 inches.

(18) Hooboodie, or wild cashew, from the Moraballi Creek, Essequebo River. This tree grows in low situations near water and averages about 80 feet in height. The wood is light and not very durable and is only used for boards. The fruit of the hooboodie is similar in shape to that of the ordinary cashew (*Anacardium occidentale*, Lin.), and, as well as the bark, is of an astringent nature and is used medicinally in cases of diarrhea.

(19) Lallifer, from the Moraballi Creek, Essequebo River. This tree, like waibaima (No. 7), is a species of cirouaballi or siruaballi (*Nectandra* or *Oreodaphne*), and is comparatively abundant on the Essequebo; but, like all of the siruaballi species, it is difficult to procure of large size free of holes. The wood has a strong aromatic scent, and is used in boat-building. Its average height is about 70 feet, and it can be had to square 16 inches.

(20) Manniballi, from the Moraballi Creek, Essequebo River. Manniballi grows in dry situations, and its wood is distinct from, and much more durable than, that of *Manni* (*Amyris*, or *Icica*, sp. ?), a tree that always grows in swamps. Manniballi is a most durable wood when free of sap and, like tawaronero (No. 14), is superior to green heart where small sizes of timber are required. It grows tall and straight, is close grained, and of a brownish-yellow color. Its average height is about 100 feet, with a very small top. Manniballi produces a sticky yellow gum, which is not used for any purpose that I am aware of. This tree can be had to square 20 inches free of sap.

(21) Kauta-balli, from the Moraballi Creek, Essequebo River. There are two or three varieties of this tree, distinguished by the size of their leaves. Kauta-balli grows to its largest size on clay soil mixed with gravelly ironstone. It is plentiful on hilly land, and attains to an average height of 80 feet, and can be had to square 14 inches. The wood is useful for house-framing, is hard, and has a close, straight grain. The fruit of the kauta-balli is not edible; its bark, made into charcoal and ground to powder, is used by the Indian

women to mix with the clay of which their pots, gurglets, and other earthenware vessels are made.

(22) Wadaduri, or monkey pot (*Lecythis grandiflora*, Aubl.), from the Moraballi Creek, Essequebo River. There are two varieties of this tree plentiful throughout the colony, distinguished by the size of their leaves and the places where they grow. This sample is from the small-leafed kind, which grows to a large size on sand and clayey soil and attains to an average height of about 100 feet. It can be had to square 28 inches free of sap. The broad-leafed variety grows in swampy places and is a much smaller tree; its wood is not so durable as that of the small-leafed variety. It is used for furniture, house-building, etc., and formerly for hogshead staves. The tree bears a nut, which is sometimes eaten, and a fine oil can be extracted from the kernels.

(23) Wamara, from the Moraballi Creek, Essequebo River. This tree is not plentiful in any part of the colony below the rapids. It grows on sandy soil, and does not average more than about 60 feet in height, and can be had to square 12 inches free of sap. The heart, or *tacouba*, is exceedingly hard, heavy, and very close grained, resembling ebony. The sap wood, of which there is very little, is of a yellowish-white color; on exposure to the weather it rots away from the heart rapidly. The Indians make their clubs from this wood. It is little used in the colony, owing to its extreme hardness, but it is a fine wood for inlaying and other cabinetwork.

(24) Irriariadan, from the Moraballi Creek, Essequebo River, where it grows plentifully on high, sandy soil. Irriariadan is a species of trysil (No. 8) and is little known. It is a fine wood of a dark-brown color and suitable for cabinetwork, partition boards, staves, and many other purposes. The average height is about 80 feet, and it can be had to square 10 inches free of sap.

(25) Dukuria, from the Moraballi Creek, Essequebo River. Dukuria is plentiful throughout the colony, and grows in dry soils; it is used for house-framing and many other purposes, and is a very serviceable wood. There are two kinds of Dukuria—fine and large leafed. Its average height is about 90 feet, and it will square 16 inches free of sap.

(26) Dakama-balli, from the upper Essequebo River, where the tree grows plentifully near the water. Its average height is about 80 feet, and it will square 20 inches free of sap. The wood is little used. From the seeds of the dakama-balli a starch is extracted which is considered very efficacious in cases of dysentery or diarrhea. The Indians, when their cassava fails, use the starch mixed with decayed wood to make a kind of bread. The bark is useful for tanning.

(27) Green heart, or bibiru (*Nectrandra Rodiæi*, Schomb.), from the Moraballi Creek, Essequebo River. There are three varieties of green heart—yellow, black, and mainop—all most serviceable and durable woods if cut when arrived at maturity. Green heart is one of our tallest forest trees, and logs can be had from 18 to 24 inches square and 70 feet long. It grows in clay soil near the rivers and creeks and not over extensive tracts of country, like the bullet tree and wallaba. Owing to the great demand for this timber and the want of legal restriction to prevent the cutting of the young trees by woodcutters and charcoal-burners, it is becoming extremely difficult to procure good green heart, and its preservation is worthy of the attention of the legislature. Green heart is one of the eight first-class woods at Lloyd's; and admirable kelsons, knees, and other timbers can be had of it. Sawn into scantling it is used for planking vessels. For wharfs, house-framing, mill timbers, and many other purposes green heart is unsurpassed by any other wood in the colony. From the bark and seeds bebeerine is extracted. The Indians use the seeds medicinally in cases of diarrhea and for food, ground and mixed with other meal, in times of scarcity.

(28) Eta-balli, from the upper Essequebo River. Eta-balli is plentiful in low situations near the rivers and creeks. The wood is little used. The tree attains to an average height of about 90 feet, and will square 18 inches free of sap.

(29) Wild guava, from the upper Essequebo River. Wild guava grows best in rocky soil. There are four varieties of this tree. The bark is a powerful astringent, and contains tannin.

These trees are not plentiful, and the wood is little known or used; but where a light, tough, and close-grained wood is desirable wild guava should answer admirably. Its average height is about 60 feet, and it will square 10 inches.

(30) Arrisouroo, from the upper Essequebo River, where it grows plentifully in low situations near the river. This wood is of a dark-yellow color, and has a very bitter taste; it lasts long exposed to the weather, and is not eaten by worms. For these reasons I think it is well adapted for planking vessels and making estates' kokers. The average height is about 80 feet, and it will square 14 inches free of sap. A decoction of the bark is used for dressing ulcers and the sap as a remedy for ringworm.

(31) Kamarakata, from the upper Essequebo River. Kamarakata is a dark-brown, close-grained, heavy wood of a bitter taste, and resembles hackia (No. 44—*Siderodendron triflorum*, Vahl.). It is very lasting and is used for boat timbers, for which purpose it answers well. It grows in Mahaicony, on the Essequebo in low places near the river (often hanging over the water), and on the islands in and above the rapids. Kamarakata is comparatively a short tree, not averaging more than 50 feet in height, but has a large trunk. It can be had to square 22 inches free of sap, of which there is very little.

(32) Dukala-balli, from the Moraballi Creek, Essequebo River. Dukala-balli is a rare tree, and grows in clay and sandy soil. The wood is of deep-red color, heavy, and close grained, and is used for making articles of furniture, bedstead posts, etc. It takes a fine polish, and is a durable wood. Dukala-balli grows to a large size; its average height is about 120 feet, and it will square 20 inches free of sap.

(33) Suradanni, from the Moraballi Creek, Essequebo River. Suradanni grows in low situations on the Essequebo River, and is plentiful. The wood is of a deep-red color, grows to a large size, and is used for making canoes, planking boats, and many other purposes.

(34) Caraba, or crab wood, white variety (*Carapa Guianensis*, Aubl.). There are two kinds—the white and red—both of which attain to a large size and are very useful woods. From the trunks canoes are made; and, sawn into boards, it is used for making furniture, partitions, flooring, etc. Masts and spars are sometimes made from crab wood. The seeds yield the well-known "crab oil," and the bark is used for tanning. Along with green heart, this is one of the few trees in the colony that has all its parts useful. The average height of a full-grown tree is about 120 feet, and it can be had to square 30 inches. The tree from which the sample came was 170 feet in height and 42 inches in diameter.

(35) Foglekop, from the Itoori-bisci Creek, Essequebo River. Foglekop grows in sandy soil, and is a light-colored, close-grained wood of little weight, and is plentiful on the Essequebo and Pomeroon rivers. Sawn into boards, it is useful for indoor work, partitions, doors, etc. Its average height is about 70 feet, and it will square 12 inches. Foglekop bears a small eatable fruit, the seeds of which contain oil.

(36) Houboo-balli, from the Itoori-bisci Creek, Essequebo River, where the trees grow plentifully. The wood is of a light-brown color, variegated with black and brown veins. It takes a fine polish, and is useful for making articles of furniture and cabinetwork of any description. Under water it lasts a long time, and on the bottom of a punt or boat will outlast almost any other wood. The tree attains to an average height of about 100 feet, and will square 20 inches free of sap. The bark contains a sticky gum.

(37) Simiri, or locust (*Hymenæa Courbaril*, Lin.), from the Itoori-bisci Creek, Essequebo River. Simiri is abundant and grows best in white, sandy soil. The wood is hard, heavy, and close grained, of a brown color streaked with veins, and takes a fine polish. It is used for making furniture, mill beds, and treenails for planking of ships. There are two varieties of this tree—Simiri and K'wanarri—distinguished by the size of their bean pods. The pulp surrounding the pods of the beans of both trees is edible. The Indians make wood-skin canoes from the bark. The tree yields the gum animi of commerce. The gum is found in large quantities where a tree has rotted away, many barrelsful being often taken from one spot. The gum forms in the inner part of a hollow tree, and it may also be procured in small quantities by tapping.

(38) Hiawa-balli (*Omphalobium Lamberti*, Dec.), from the Itoori-bisci Creek, Essequebo River. This is a rare tree, and its wood is in great demand for cabinetwork. It is easily worked and of great beauty. Hiawa-balli grows on sand and rocky soil and often attains to a large size. Its average height is about 90 feet, and it will square, free of sap, 12 inches. It has a sticky gum similar to Houboo-balli (No. 36).

(39) Siribidanni, from the Itoori-bisci Creek, Essequebo River. Siribidanni grows in loose, sandy soil and is plentiful in some localities. It does not grow to a large size, and the wood is very sappy. The heart is of a purple color, close grained and hard, and is useful for inlaying and making furniture. The sap of this wood decays rapidly on exposure to the weather. The average height is about 50 feet, and it will square, free of sap, 4 to 6 inches.

(40) Simarupa (*Simaruba officinalis*, Dec.), from the Itoori-bisci Creek, Essequebo River. Simarupa is plentiful throughout the colony, and grows to a large size on sandy soil and on islands in the river. The wood is of a light color, light, and close grained, and is one of the most useful woods for partition boards and other inside house work. Wood ants will not eat or injure simarupa. The average height of the tree is about 90 feet, and it will square 24 inches. The bark of the root is used medicinally in cases of diarrhea.

(41) Kurahara, from the Itoori-bisci Creek, Essequebo River. Kurahara grows in sandy soil and on the edges of swamps; it is a very straight tree, with dark-green leaves. The wood is red, of the color of cedar, and floats in water; it is used for making canoes, planking boats, and spars. The average height is about 90 feet, and it will square 20 inches free of sap. Kurahara has a resinous gum not used for any purpose that I am aware of.

(42) K'wanarri (locust). (See No. 37.)

(43) Duka, from the Itoori-bisci Creek, Essequebo River. There are two or three kinds of duka, all growing on dry, sandy soil. The sample is from the largest kind. The wood is light, and, sawn into boards, is useful for indoor house work, tables, etc. Its average height is about 50 feet, and it will square 10 inches.

(44) Hackia (*Siderodendron triflorum*, Vahl.?). This tree grows plentifully in some localities on dry, sandy soil, and during the time it is in flower in the month of November is one of the most beautiful of our forest trees. At this time, on the side of a hill, the bright-yellow flowers of the hackia appear from a distance like a mass of gold against the dark-green foliage of the surrounding forest. The wood is exceedingly hard, close grained, heavy, and of a brown color. It is valuable for making cogs and shafts, but is almost too hard for any other purpose. Average height, about 65 feet. It will square 12 or 14 inches free of sap.

(45) Kumara, or tonka bean (*Dipterix odorata*, Willd.), from the Itoori-bisci Creek, Essequebo River. Kumara grows plentifully in some localities, especially above and on the islands in the rapids of the Essequebo River. Kumara is a close-grained, heavy, brown-colored wood, exceedingly tough and durable, and is useful for cogs, shafts, and any other purpose where a strong wood capable of resisting great pressure is desired. This tree yields the tonka beans, well known in the colony; they are used by the Indians to perfume their hair oil, and when put among clothing are supposed to keep away moths and other insects. An oil can be extracted from tonka beans. Average height is about 90 feet, and will square 22 inches.

(46) Kuraroo, or bat seed, from the Itoori-bisci Creek, Essequebo River. Kuraroo is a tree common throughout the colony and may be seen growing in Georgetown, where it is known as wild olive. Its wood is hard, but not very durable, and is little used; it takes a fine polish and would be useful for furniture. This tree does not grow very tall, but the diameter of the trunk is great in proportion to its height. Its average height is about 60 feet, and it can be had to square 36 to 48 inches in short lengths.

(47) Aramata, from the Itoori-bisci Creek, Essequebo River. Aramata is comparatively a common tree throughout the colony, and grows on sandy soil. It is a dark-colored, hard wood and is used in boat-building, house-framing, and sometimes for cabinetwork. Its average height is about 80 feet, and it can be had to square 12 inches free of sap. A decoction

of the bark is used by the Indians to wash their dogs, and sometimes their own heads, to destroy vermin.

(48) Caraba, or crab wood, red variety (*Carapa guianensis*, Aubl.). (See No. 34.)

(49) Warikuri, waracoori, or white cedar, from the Itoori-bisci Creek, Essequebo River. It grows plentifully in swampy places. With the exception of its bark, it bears no resemblance in any of its parts to kurana, or red cedar. White cedar, when full grown, is a dark-brown, hard, heavy, and close-grained wood, with a white sap, very durable, especially under ground, but splits on exposure to the sun. It is probably the best wood procurable in the colony for foundations. White cedar grows luxuriantly in the swamps up the Lamaha Canal leading into Georgetown. Its average height is about 60 feet, and it will square 10 inches.

(50) Brown cirouaballi, or siruaballi, from the lands of Mr. William Thompson, Pln. "Adventure," Essequebo. This tree grows to a large size, and is used, like other siruaballis, for boat-building, for which purpose it seems specially adapted. It attains to an average height of 90 feet, and can often be had to square 36 inches. (See Nos. 7 and 19.)

(51) Oolu, from the Itoori-bisci Creek, Essequebo River, where it grows plentifully in loose, sandy soil. The wood has a strong aromatic scent resembling hiawa (No. 52—*Icica heptaphylla*, Aubl.), is of the color of pale cedar, and should be useful for drawers and shelves of wardrobes. Its average height is about 90 feet, and it can be had to square from 16 to 18 inches. Oolu produces a gum resembling hiawa, but in much smaller quantities.

(52) Hiawa (*Icica heptaphylla*, Aubl.), from the Itoori-bisci Creek, Essequebo River. Hiawa grows plentifully in Essequebo in loose, sandy soil; its wood is little used, as it decays rapidly on exposure to the weather. Like oolu (No. 51), it has a strong aromatic scent, is light, and should be useful for drawers and wardrobe shelves. This tree produces the gum known as hiawa, or resin of conima, which is burnt as incense. The average height is about 50 feet, and it will square 10 inches.

(53) Kurana, or red cedar (*Icica altissima*, Aubl.), from the Issorooro Creek, upper Pomeroon River. It grows to a large size, and is plentiful in some localities, notably so in the Waini; it is also found in the Cuyuni and Corentyne and in the upper part of the Pomeroon. It grows generally in low situations in clay soil. Red cedar is a most serviceable and valuable wood, and its uses are too well known to require description. The tree averages 100 feet in height, and can be had 38 or 40 inches in diameter. It has very little sap.

(54) Waciba, washiba, or bow wood, from the Issorooro Creek, upper Pomeroon River. Waciba grows to a large size, but it is a rare tree and little known. Its wood, of an olive color, is exceedingly tough, hard, and close grained, and is the best-known wood for bows. Its average height is about 120 feet, and it can be had to square 30 inches free of sap.

(55) Mora, white variety (*Mora excelsa*, Benth.), from the Issorooro Creek, upper Pomeroon River. There are three varieties of mora, known as red mora, white mora, and mora-bucquia. The first two grow in swamps and near the rivers and creeks, and are both very durable woods. Mora-bucquia, on the contrary, grows in high situations in clayey, rocky soil, and is not a durable wood. Mora seeds are used by the Indians to make a kind of meal, which is mixed with their cassava. The bark is used for tanning and medicinally in cases of dysentery. Mora is used in shipbuilding, and is an exceedingly tough wood, difficult to split, and one of the eight first-class woods at Lloyd's. Mora grows to a greater size and is more plentiful in the Barima River than in any other part of the colony. It often attains to the height of nearly 200 feet, but in such cases has generally a hollow trunk. It can be had to square 24 inches free of sap and holes.

(56) Tibicusi, or bastard letterwood, from the Piraka Creek, Pomeroon River. Tibicusi is a rare wood and only used for bows, walking sticks, and inlaying cabinetwork. The heart is beautifully marked, hard, heavy, and close grained. The sap decays rapidly on exposure to the weather. Average height is about 60 feet, and it will square 5 inches free of sap.

(57) Buro-koro, burracurra, paira, or letterwood, (*Brosimum Aubletii*, Poep., *Piratinera Guianensis*, Aubl.). Letterwood is a rare tree, and the wood is used for the same purposes

as tibicusi. It is beautifully marked, close grained, takes a high degree of polish, and is very heavy. Letterwood trees are sometimes of large size, but the heart, which is the only useful part, is very small, a tree of 20 inches in diameter having only 7 inches of heart; average height, about 60 feet.

(58) Keritee, or kretti, from the Aroua-pia-kooroo Creek, Pomeroon River. Keritee is a species of siruaballi, and is plentiful in some localities. The wood has a strong aromatic scent, is light, and in color and appearance resembles satinwood. It is useful for partitions and the upper planking of boats. Its average height is about 80 feet, and it will square 20 inches.

(59) Koorooboorelli, or purpleheart (*Copaifera pubiflora* and *Copaifera bracteata*, Benth.), from the Aroua-pia-kooroo Creek, Pomeroon River. There are two kinds of purpleheart, called koorooboorelli and marawinaroo. The bark of the marawinaroo (which is not so durable and with a more sappy wood than koorooboorelli) is used, as also that of the simiri or locust, by the Indians for making canoes, or "wood skins." They are sometimes of large size, accommodating 15 or 16 persons. Purpleheart is one of the tallest of our forest trees, and its round top may be easily distinguished rising above the surrounding forest on the hilly lands of the interior. The wood is of a purple color, hard, close grained, durable, and very tough. It is a fine wood for mill beds, house-framing, etc., and is capable of resisting great strains. Its average height is about 120 feet and there are many trees nearly, if not quite, 200 feet high. It can be had, free of sap, to square 30 inches.

(60) Yellow cirouaballi, or siruaballi, from the Aroua-pia-kooroo Creek, Pomeroon River. A light wood of bright-yellow color and strong aromatic scent, used principally for planking boats, and, free of sap, is a most durable wood. Yellow siruaballi often grows to a very large size in loose, sandy soil, but is difficult to procure over 12 inches square free of sap. The average height is about 60 feet. The bark is useful for tanning.

(61) Awati, from the Aroua-pia-kooroo Creek, Pomeroon River. Awati is a light wood, of close grain, the color of white pine, and is useful for indoor work. This wood is little known and not much used. A decoction of the bark and seeds is used as a wash by the Indians in cases of smallpox and is said to be very effective in healing the pustules. The average height is about 60 feet and its diameter 16 inches.

(62) Kakaralli (*Lecythis ollaria*, Lin.), from the Itoori-bisci Creek, Essequebo River. There are two kinds of kakaralli common throughout the country of Essequebo, and known as the white and black kakaralli. These woods are close grained and tough and of a light-brown color; they are used for house-framing, building wharfs, etc. It is said that barnacles will not eat or injure kakaralli. These trees grow tall and straight, but are too heavy to make spars. The inner bark of the white kakaralli is used by the Indians as a substitute for, and in preference to, paper for making their cigarettes, and is called "ouina." The average height of the tree is about 80 feet, and it will square 16 inches free of sap.

(63) Buhoorada, from the Itoori-bisci Creek, Essequebo River. Buhoorada is a large tree, common throughout the colony; it has a large top with reddish-brown leaves. The wood is heavy and close grained, but it is not well known and is little used. Its average height is about 75 feet, and it will square 20 inches free of sap.

January 15, 1878.

GOVERNMENT, CONSTITUTION, AND LAWS.

The constitution of the colony is a survival from the Dutch period, the articles of capitulation of 1803 guarantying its ancient laws and usages. Under the Dutch there were two distinct colonies—Essequebo and Demerara—under the West India Company, and Berbice, under the Berbice Association. These trading companies were, however, superseded in 1792 by a West Indian council appointed by the States-General of the Netherlands. The com-

panies and the council were supreme; but local administrative bodies had grown up, that for Essequebo and Demerara going under the name of the council or court of policy, while that in Berbice was called the council of government. The former, which became the model for the court of policy of British Guiana of to-day, consisted of four officials, including the governor, and four colonists, the latter being chosen by the court from nominations of a double number submitted by the college of kiesheers, or electors. The kiesheers were elected for life by a constituency of slave-owners, only those possessing twenty-five slaves being entitled to vote, their only duties being to nominate, on behalf of their constituents, for the courts of justice and policy.

The old court of policy existed, with minor alterations, up to the end of last year (1891), then consisting of ten members—five officials and the same number of colonists—none but the governor, who also had the casting vote, being entitled to bring forward a resolution. It will appear from this that the official party were absolute, as the governor could always depend on his subordinates and decide any matter by his dual vote. This vote became such a grievance in matters connected with the finances that in 1796 the colonists were allowed to delegate five persons to form a college of financial representatives and sit and vote with the court of policy whenever matters connected with the revenue and expenditures were under consideration, this council going under the name of the combined court. Even here, although the colonists can outvote the official section, they are hampered by the fact that every proposition or estimate comes from the Government, and they can only proceed by amending or directly negativing the motion.

The best-informed colonists, while considering the colony overburdened with officialism, were not particularly desirous of change, but rather liked the paternal system. A large number of persons, however, petitioned the Queen for reform in the shape of direct representation, with a house of assembly, and a lowering of the franchise. As a result a very small concession has been granted in the new constitution coming into operation with the present year. By this the kiesheers are abolished, the court of policy increased to sixteen members, and an executive council of four officials and three colonists, nominated by the Queen, established. The franchise has been lowered somewhat, the qualification for voters being a yearly income of £100 or property value of $500; but the number on the register is under 2,000, *i. e.*, less than 2 per cent. With such a mixed, semicivilized population in some respects, anything like manhood suffrage would, in the belief of many, be impossible and attended with great difficulties. Some of the colonists would even, it is said, prefer the old system of kiesheers to open voting, as under it there were no opportunities for the collection of turbulent mobs.

There is really very little difference between the new constitution and the old. Whether the court of policy consists of ten or sixteen members it can not matter, as the same equal number of officials and elective members

and the governor's casting vote remain. The executive council will take away some of the routine work of the court of policy, but, as its deliberations will be held in secret, probably this may be a cause of dissatisfaction at some future period.

Anthony Trollope called this government "a mild despotism tempered by sugar, the governor being the father of his people and the governor's wife the mother." This opinion, although jestingly delivered, fairly represents matters. There is a great want of independence and individual action and a tendency more and more to look to the Government for everything, at the same time grumbling at the taxes which naturally follow. Lately some talk has been going on about opening up the country by railroads and roads, and, of course, as usual, the authorities are blamed because it is not done and done at once.

The fundamental basis of the civil law is the Roman-Dutch code. The criminal law is generally English, the Dutch system having been long abolished. Among the most striking peculiarities in connection with the civil law are the regulations for marriage and inheritance. A marriage with community of goods gives the wife control of half the joint property, which is hers absolutely, she being able to prevent alienation if she chooses. The law of inheritance gives the wife, first, her half and then half of the remainder, after which the children are bound to get half of what is left; there can, therefore, be no such thing as cutting off with a shilling. If a man marries a second time, having children by a former wife, he is bound to perform an act of *verweezing*, to provide for their support. If a man dies intestate, the administrator-general takes over his property and divides it according to law, and, except there may be a little more expense in commissions, the division will be almost the same as if he had made a will.

THE COLORED RACE IN BRITISH GUIANA.

The race designated and known in the United States as colored is here known and designated as follows, viz: Black, Cob, Mulatto, Mustee, Costee, and Fustee. But for the purposes of this report it is deemed proper to follow the designation familiar to Americans; hence in the word "colored" the six designations above are embraced.

To understand the present condition of the British Guiana colored man it is necessary to revert to 1838, when slavery was finally abolished throughout the British dominions. The number of slaves on the plantations before that time amounted to between 60,000 and 70,000, engaged in raising crops of cotton, coffee, and sugar, which realized nearly £2,000,000 annually. The slave, I am told by the most liberal and disinterested persons, was, on the whole, very comfortable. He was provided with a hut, a piece of ground for growing provisions, regular allowances of salt meat or fish, and as much clothing as he really required. On Saturday he worked in his provision ground and on Sunday brought his produce to market, and the supply of plantains, yams, fruits, feathered stock, and even pigs was generally obtained

from the slaves. Many saved money, and some even went so far as to buy slaves of their own, whom they are said to have rather harshly treated. It has been frequently affirmed that, with the legal protection which he enjoyed and the fostering care of his master, whose self-interest alone would make him look after his "property," the colored man was in a better condition than he is now.

Emancipation was, it is said, to the colored man a doubtful blessing. He knew nothing of the duties of a citizen. To be a freeman was to be, like his master, the occupier of a large house, with, as he supposed, nothing to do but to eat and drink and enjoy himself. So soon as he became free he began to take things easy, working when and as long as he pleased, and caring little or nothing for the responsibilities of a freeman. If he had a wife and children, "massa" would, he supposed, look after them as he had done before; as for himself, he would take life easy. He continued, it is said, to go to his former master for his allowances of salt fish and other things, and when they were refused unless he worked regularly, he became abusive, going so far as to say that the "Queen" would see him righted. Then the planter tried to take away his house and provision ground, with a view to compel him to work, but, when this was done, there were general strikes. Unfortunately, perhaps, for both parties, the planter could not be independent. A plantation in British Guiana can not be neglected, even for a few weeks. The dams in front and back must be kept up, as well as the drainage, otherwise the whole estate would be ruined. It followed, therefore, that the planters began to bid against each other for the services of their late slaves and offered wages beyond what the estate could afford, as well as the old allowances. But even this did not induce the colored man to work regularly, while the feeling in England against anything like bondage prevented any law being enacted which would coerce him in any way, even so far as an annual engagement.

The plantations were at this time stocked with fruit trees, while plantains and bananas were very plentiful. The slaves naturally looked upon these trees as common property, and, as there was always more than enough, the planter allowed them to pick as much as they pleased. When they became free they continued, as before, to take the fruit, as also other things, as a right, neither caring nor supposing that it was necessary to give any equivalent. In a tropical climate like this a man may live almost on fruit, so that there was nothing left for the planters but to destroy the trees or allow them to perish by neglect. Thus the grassy dams of the plantations, which are said to have been beautiful avenues of fruit trees, gradually became the bare mud embankments which are seen to-day, and which make a sugar estate so monotonous and unpicturesque.

The decade between 1840 and 1850 witnessed the downfall of the old proprietary body. Plantations were abandoned on every hand, while almost all that remained in cultivation fell into the hands of English capitalists, who, holding mortgages, kept them in working order in hopes of better times. The few industrious colored men who had gleaned a rich havest in the com-

petition for their services now bought a fair number of the plantations, which they divided among themselves, and which now form the villages. This, of course, tended more and more to reduce the amount of labor at command, so that estates became almost valueless. As for the colored people, so long as they had money and retained a remnant of their industrious habits, they worked their plantations in common, but very soon, falling out among themselves, the dams and drainage became defective, and the villages became little better than swamps. The Government, however, has taken them in hand during the last twenty years, and they are now somewhat better; but it is still nothing out of the common to hear, after a few days' heavy rain, that the east coast villages are under water. Most of them are in a wretched state, the little huts standing on piles (as all houses do here) on a bare piece of land, which is dry mud choked with leaves at one season and soft, sticky clay or dirty water at another, in many cases without a bush or tree to enliven its barrenness. The sanitary condition of these villages is said to be very bad, and if it were not for the heavy rains, which give them such thorough scourings, they would be almost uninhabitable. Pigs and fowls also assist in removing the filth, and, as there are hardly any inclosures, these range everywhere and often clear up the filth almost as soon as it appears. Carrion crows do a great deal, also, in removing drowned animals, which otherwise would pollute the air.

In speaking generally it should not be omitted that here and there a few of the more industrious have good houses and try to improve their surroundings. These, however, are handicapped by the carelessness of their neighbors, who allow pigs and goats to range everywhere, not caring whether they may destroy the young crops of their neighbors. This proves so aggravating that the industrious villager often gives up in despair and abandons his attempts at improvement. How these idle, indolent people live is a mystery. Now and then they work for a day or two on an estate, but, being so independent, they often spend a day or two in searching for that which pays a trifle higher wages, not considering the time lost in the search for work. Children suffer greatly from hunger, rarely getting more than one meal a day, when the father or mother return in the evening from work, and when they are idle, perhaps begging from a neighbor. It is not an uncommon thing to see a woman with a crying child follow a man to a rum shop, trying to obtain a few cents before he spends it all. Her language is something so entirely beyond anything usually expected from a woman that a newcomer is shocked to the last degree. Quarrels and fights are common, bottle-throwing, cutting with knives and razors, and biting being the usual modes of attack. The women are said to have less self-respect than the men, and on the two or three occasions when riots have taken place in Georgetown they have been among the ringleaders.

Education is almost free, the Government spending about $35,000 per annum in assisting the various denominational schools. Most of the schoolmasters are colored, and they appear to be very suitable for primary teach-

ing, having good memories, and when once launched into a groove are said to be strict disciplinarians.

As a heritage of slavery, agricultural labor is considered low and degrading by the colored man. It has therefore followed that Georgetown is flooded with a mediocre class of these people, all trying to get situations as store or other clerks. The wages they receive are often less than they could earn as laborers; but they do not mind this, as they consider themselves so much more respectable. This, however, is common among white people in many places.

Many tell me they are not fit for any position of responsibility; but this ocular evidence refutes, as there are many colored men here who have attained the highest position in the various avocations of life and who discharge their trusts with as much credit as any white man could.

Social equality obtains here. There appears to be little or no prejudice on account of color. Intelligence, education, and character seem to govern this.

Mechanics among the colored people are said to be inferior and lacking pride in their work. Good workmen have a large field, but this class is said to care little whether the work is creditable or not so long as they get paid for it.

Many of the colored men besides those in the villages are possessed of landed property, but this is of very little value; in fact, land is almost worthless, even a sugar plantation selling for the value of the crop on the ground, hardly any of them realizing the cost of the buildings and machinery. Government land can be bought for $1 an acre, but many landowners would be glad to get as much as that. House property in Georgetown is mostly in the hands of the Portuguese, very few black men being possessed of buildings.

Reverting to the downfall of the old estate proprietors, it must not be supposed that they gave up without a struggle. As early as 1834, in anticipation of the four years' apprenticeship, in which the hours of compulsory labor were reduced from nine to seven and a half a day, the more farsighted ones began to look around for places whence labor could be procured. Several places were tried, immigrants being brought from Malta, Cape Verde Islands, Madeira, Africa, China, and finally India. The Europeans did not make good laborers, but the Portuguese from Madeira settled in the country and have become an important factor in its development. The number of Africans (who were slaves liberated from captured vessels by British cruisers) was unfortunately too small to be of much service, while the first East Indian coolies turned out very poorly. On account of the feeling in England against anything like binding engagements, the coolies did much as they liked, in many cases ending by becoming vagrants. This caused a great stir, and immigration was stopped for a time; but these difficulties were gradually overcome, the system becoming more and more easily managed, until now it may be considered as almost perfect. This is only another name for slavery. About 5,000 East Indians arrive annually, the cost being divided between the Government and the planters in the proportion of

one-third by the former and two-thirds by the latter, the whole amounting to about £90,000 ($438,000) per annum.

As an inheritance from the period before emancipation, the colored men of British Guiana is wanting in independence and self-reliance. In the same way that he formerly looked to his master for everything he now depends on the Government. When his village is inundated, he does nothing himself, and, notwithstanding that there may be enough able-bodied men to repair the dam or open the drainage, nothing is done. In many of the villages the Government has taken these matters in hand, imposing taxes to keep them up; but a very large number of the people can not, or will not, pay, and if their land is sold it brings little or nothing, so that they become a burden to the revenue. Up to the last few years the losses on the administration of the villages were considerable, but now the arrears of taxes only amount to about 20 per cent.

The revenue of the colony for the fiscal year 1889–'90 amounted to £522,767 2*s.* 1½*d.*, the greater portion thereof being derived from import duties. Nearly half of the remainder was derived from rum duties and licenses, the balance being made up of other licenses, fees, fines, royalty on gold, etc. For such a small population the official element is very large, most of the clergymen of all denominations and medical officers being Government employés. With a taxation of about $9 per head, it follows that this must fall very heavily on some classes. The colored man is said to pay his proportion largely in the shape of rum duties, but I must confess, after nearly a year's residence in Georgetown, that I have not seen a drunken colored man. Other classes pay more heavily in the way of store licenses (every store requiring one), as well as imposts on horses, carriages, dogs, etc. The plantations may be considered as taxed very heavily by having to maintain the public roads through them, while the towns and villages generally pay 2 per cent on the appraised value of the lots and buildings for road drainage, lighting, etc.

The only article of food grown to any extent in the colony is the plantain. This, together with salt fish, pork, or beef, has hitherto been the staple food of the colored man. Latterly, however, a majority of the more industrious of the villagers has gone to work in the gold diggings, and plantains have become very scarce and high in price, a bunch formerly costing 24 to 32 cents now being sold for 80 cents to $1. It follows, therefore, that the colony has become more and more dependent on imported provisions, of which a large proportion is brought from the United States. The only article of food imported from elsewhere in quantity is rice, which is the staff of life for the East Indian coolie. This could easily be grown in the colony, there being plenty of land well suited to its cultivation, but very little has been done in developing the article. The fact is, generally the only capitalists connected with the colony are embarked in the sugar industry, and it would be useless to expect them to give this up, while the lower classes, including the small freeholders, never originate any cultivation on their own account. The colored man is imitative in everything, two or three of them

growing sugar cane on their own account for manufacture in their small mills or to sell to neighboring estates, while many other articles could be grown to far better profit.

Having to depend almost entirely on imported provisions, it follows that living is expensive, anything beyond the barest necessaries costing fancy prices. House rent is also high, but clothing is cheaper than might be expected. Altogether the comforts and luxuries which are easily procurable in other countries are here either wanting or beyond the means of all but very few. Salaries, especially of officials, are therefore higher than in the United States or Europe. The governor is paid £5,000; the lieutenant-governor, as government secretary, £1,350; surgeon-general, £1,200; chief justice, £2,500; two judges and attorney-general, £1,500 each; while several other officials receive £1,000 each.

IMPORTS.

Table showing the imports at Demerara for the year ended December 31, 1891.

Articles.	Quantity.	Value entered.	Rate of duty.	Countries whence imported.
Arrowroot.....lbs..	486,456	$16,881.09	Half a cent per pound...	United Kingdom, British West Indies, East India, Colombia, and Bermuda.
Bacon.....do...	22,452	2,875.98	2 cents per pound.....	United Kingdom and United States.
Beef:				
Dried or smoked.....do...	5,052	536.90	.....do.....	United Kingdom, United States, British West Indies, and British North America.
Pickled...bbls. of 200 lbs..	6,479	80,129.65	$1.50 per barrel.....	Do.
Blue (laundry).....lbs..	20,250	685.66	Half a cent per pound...	United Kingdom.
Bran, middlings, and shorts .....bush..	5,083	1,613.56	5 cents per bushel.....	United Kingdom and United States.
Bread, biscuits, and crackers .....lbs..	491,654	27,555.01	Half a cent per pound...	Do.
Bricks.....No..	1,536,400	34,543.05	$1 per 1,000.....	United Kingdom and British West Indies.
Buckets and pails.....doz..	5,558	7,402.23	25 cents per dozen.....	United Kingdom and United States.
Butter.....lbs..	510,232	92,926.46	2 cents per pound.....	United Kingdom, United States, British West Indies, France, British North America, Holland, and Portuguese possessions.
Butterine and oleomargarine .....lbs..	31,322	3,552.72	.....do.....	United States and United Kingdom.
Candles:				
Tallow.....do...	29,782	2,860.12	1 cent per pound.....	United States.
Other than tallow....do...	119,971	12,266.61	5 cents per pound.....	United Kingdom.
Cattle.....No..	542	22,030.62	$5 per head.....	United Kingdom, Venezuela, and British West Indies.
Cement.....bbls..	14,702	28,194.59	25 cents per barrel.....	United Kingdom.
Cheese.....lbs..	326,987	43,335.59	2 cents per pound	United Kingdom, United States, Holland, British North America, Venezuela, Portuguese possessions, and British West Indies.
Chloral hydrate.....do...	17	16.98	30 cents per pound.....	United Kingdom.
Chlorodyne.....do...	55	264.96	72 cents per pound.....	Do.

Table showing the imports at Demerara for the year ended December 31, 1891—Continued.

Articles.	Quantity.	Value entered.	Rate of duty.	Countries whence imported.
Chocolate.....lbs..	2,672	$1,437.07	4 cents per pound.....	United Kingdom, United States, British West Indies, Holland, and Portuguese possessions.
Cigars and cigarettes.....do...	9,805	20,274.28	$1.20 per pound.....	United Kingdom, United States, Holland, Spanish West Indies, and Portuguese possessions.
Coal:				
In hogsheads.....No..	153	934.60	32 cents per hogshead....	United Kingdom.
Loose.....tons..	50,114	207,636.81	50 cents per ton.....	United Kingdom and British North America.
Cocoa.....lbs..	87,169	8,352.80	1½ cents per pound.....	Dutch Guiana and British West Indies.
Coffee.....do...	228,335	38,284.02	.....do.....	Dutch West Indies, United States, British West Indies, United Kingdom, and Venezuela.
Collodion.....do...	3	40.63	$5 per pound.....	United Kingdom.
Confectionery.....do...	104,673	14,664.02	5 cents per pound.....	United Kingdom, United States, and Portuguese possessions.
Cordage.....cwts..	3,296	33,405.32	$1 per cwt.....	United Kingdom, United States, and British possessions.
Corks, cut.....lbs..	19,417	4,670.51	10 cents per pound.....	United Kingdom, United States, and Portuguese possessions.
Corn.....bush..	45,646	36,069.19	10 cents per bushel.....	United States.
Corn brooms.....doz..	1,085	1,559.87	20 cents per dozen.....	Do.
Corn meal and oatmeal..lbs..	2,165,644	42,587.15	One-fourth of 1 cent per pound.	United States, United Kingdom, and British West Indies.
Crushed and ground feed.bu..	6,285	4,392.82	10 cents per bushel.....	United States and British West Indies.
Dogs.....No..	61	798.50	$5 per dozen.....	United Kingdom, British West Indies, and United States.
Donkeys.....do...	6	70.50	$1 per head.....	Venezuela.
Dynamite, gun cotton, lithofracteur, etc.....lbs.	41,490	7,754.78	4 cents per pound.....	United Kingdom, United States, British West Indies, and Portuguese possessions.
Essences.....pints..	461	645.61	30 cents per pint.....	United Kingdom and United States.
Ether, sulphuric.....gals..	54	159.66	$3 per gallon.....	United Kingdom.
Fish.....cwts..	69,065	310,357.33	50 cents per cwt.....	United Kingdom, British North American possessions, United States, British West Indies, and Venezuela.
Pickled:				
Salmon.....				
.....bbls of 200 lbs..	408	4,334.00	$2 per barrel.....	British West Indies, Newfoundland, United States, and British North America.
Mackerel.....do...	759	6,125.36	$1 per barrel.....	British North America and United States.
Other kinds.....do...	5,409	17,353.78	25 cents per barrel.....	British North America, United States, Newfoundland, British West Indies, Portuguese possessions, and Bermuda.
Preserved in tins.....lbs..	349,040	47,049.58	1 cent per pound.....	United Kingdom, United States, British North America, and Portuguese possessions.
Smoked.....do...	63,350	2,737.11	Half a cent per pound...	British North America, British West Indies, and United States.

Table showing the imports at Demerara for the year ended December 31, 1891—Continued.

Articles.	Quantity.	Value entered.	Rate of duty.	Countries whence imported.
Flour.....bbls..	168,031	$753,841.29	$1 per barrel.....	United States, British West Indies, British North America, and United Kingdom.
Ganja.....lbs..	10,165	8,330.99	$4 per pound.....	United Kingdom.
Garlic.....do...	94,980	3,874.55	One-fourth of 1 cent per pound.	Portuguese possessions.
Gelatin.....do...	421	254.51	5 cents per pound.....	United Kingdom.
Ghee.....do...	63,748	6,843.79	2 cents per pound.....	United Kingdom and East India.
Ginger.....do...	42,424	2,603.78	.....do.....	United Kingdom, East India, and Portuguese possessions.
Goats.....No..	47	140.76	25 cents per head.....	British West Indies.
Grain, not enumerated, and pulse.....bush..	125,547	146,608.17	5 cents per bushel.....	United Kingdom, East India, United States, British West Indies, and Portuguese possessions.
Gums.....lbs..	2,286	790.96	3 cents per pound.....	United Kingdom.
Gunpowder.....do...	6,155	1,712.96	20 cents per pound.....	Do.
For blasting.....do...	5,500	458.40	1 cent per pound.....	Do.
Hair.....do...	2,767	938.98	5 cents per pound.....	United Kingdom and United States.
Hams.....do...	273,203	31,848.08	2 cents per pound.....	United Kingdom, United States, British possessions, and Portuguese possessions.
Hay.....do...	880,160	5,668.55	10 cents per 100 pounds..	United Kingdom, United States, and British North America.
Honey.....do...	2,473	411.30	5 cents per pound.....	United Kingdom, United States, British West Indies, and Portuguese possessions.
Hoops:				
Wooden.....No..	172,106	1,868.00	$1.50 per 1,000.....	United Kingdom, French West Indies, and United States.
Iron.....cwts..	76,270	3,496.99	10 cents per cwt.....	United Kingdom.
Horses.....No..	61	13,776.00	$7 each.....	United Kingdom, British West Indies, British North America, Venezuela, and Dutch West Indies.
Isinglass.....lbs..	385	481.64	5 cents per pound	United Kingdom.
Lard.....do...	374,116	25,699.81	1 cent per pound.....	United Kingdom, United States, British North America, and Holland.
Lime:				
Temper.....puncheons..	5,448	34,208.94	50 cents per puncheon...	United Kingdom.
Building.....hhds..	19	94.80	25 cents per hogshead...	Do.
Do.....bags..	22,369	8,302.32	2 cents per bag.....	British West Indies.
Do.....tierces..	25	144.32	18 cents per tierce.....	United Kingdom.
Lumber.....feet..	11,496,315	196,219.90	$2 per 1,000 feet.....	United States and British North America.
Malt:				
In wood.....gals..	128,959	40,961.05	10 cents per gallon.....	United Kingdom, United States, Denmark, and Holland.
In bottles.....qts..	15,010	21,912.25	24 cents per dozen.....	Do.
Do.....pts..	102,154	91,130.49	12 cents per dozen.....	Do.
Matches.....gross..	26,197	16,817.04	60 cents per gross.....	United Kingdom.
Meats preserved in tins...lbs..	90,396	13,106.64	2 cents per pound.....	United Kingdom, United States, British North America, Portuguese possessions, Holland, and France.
Milk preserved in tins....do...	155,620	14,582.61	.....do.....	United Kingdom and United States.

Table showing the imports at Demerara for the year ended December 31, 1891—Continued.

Articles.	Quantity.	Value entered.	Rate of duty.	Countries whence imported.
Mules.....No..	282	$36,360.32	$5 per head.....	United States and British West Indies.
Muskets and guns.....do...	1,073	6,951.32	$2 each.....	United States, British West Indies, and United Kingdom.
Oats.....bush..	120,724	74,980.02	5 cents per bushel.....	United Kingdom, British North America, British West Indies, Denmark, Holland, United States, and Portuguese possessions.
Oils.....gals..	572,205	134,117.87	25 cents per gallon.....	United States, United Kingdom, British North America, East India, and France.
Opium.....lbs..	10,675	44,092.23	$4 per pound.....	United Kingdom.
Paints.....cwts..	4,224	21,920.09	25 cents per cwt.....	United Kingdom and United States.
Pepper.....lbs..	27,206	3,053.78	1 cent per pound.....	United Kingdom and East India.
Percussion caps.....No..	1,183,950	617.14	4 cents per 100.....	United Kingdom.
Pickles and sauces.....qts..	422	205.26	4 cents per quart.....	United Kingdom and Dutch Guiana.
Do.....pts..	15,491	2,745.03	2 cents per pint.....	United Kingdom, Dutch Guiana, British North America, and Portuguese possessions.
Pistols and revolvers.....No..	21	120.98	$5 each.....	United Kingdom and United States.
Pitch.....bbls..	758	1,314.38	50 cents per barrel.....	Do.
Pork.....bbls of 200 lbs..	14,855	170,220.05	$1.50 per barrel.....	United States and Newfoundland.
Rice.....lbs..	47,648,564	923,300.71	25 cents per 100 pounds..	United Kingdom, East India, and British West Indies.
Resin.....bbls..	34	88.61	50 cents per barrel.....	United Kingdom and United States.
Sago.....lbs..	139,102	4,485.69	Half a cent per pound...	United Kingdom and East India.
Saltpeter .....do...	224	12.30	1 cent per pound.....	United Kingdom.
Shooks.....packs..	6,553	17,325.70	8 cents per pack.....	United Kingdom and United States.
Shot.....lbs..	31,463	1,217.87	2 cents per pound.....	United Kingdom.
Slates for roofing.....No..	30,048	1,182.48	$1 per 1,000.....	Do.
Snuff.....lbs..	1,660	1,427.83	75 cents per pound.....	Do.
Soap, common.....do...	1,684,186	46,843.21	Half a cent per pound....	United Kingdom, United States, and British West Indies.
Soaps, soap powders, and fancy toilets.....lbs..	20,605	4,653.45	2 cents per pound.....	United Kingdom, United States, and British North America.
Spices and seeds, not garden .....lbs..	196,206	8,213.29	1 cent per pound.....	United Kingdom, United States, East India, and Portuguese possessions.
Starch.....do...	13,453	510.91	2 cents per pound.....	United Kingdom and Colombia.
Staves:				
W. O.....No..	522,890	29,922.50	$2 per 1,000.....	United States and British possessions.
R. O.....do...	22,010	906.39	$1.50 per 1,000.....	British North America.
Sugar, refined.....lbs..	26,477	1,253.42	4 cents per pound.....	United Kingdom.
Tallow..... do...	246,662	14,266.77	1 cent per pound.....	United Kingdom and United States.
Tapioca.....do...	19,236	821.11	Half a cent per pound...	United Kingdom.
Tar.....bbls..	938	3,136.05	50 cents per barrel.....	United Kingdom and United States.
Tea.....lbs..	59,257	12,167.54	12 cents per pound.....	United Kingdom, United States, and East India.

Table showing the imports at Demerara for the year ended December 31, 1891—Continued.

Articles.	Quantity.	Value entered.	Rate of duty.	Countries whence imported.
Tobacco:				
Leaf—				
In packages of 800 lbs. and over..lbs..	699,006	$43,677.03	30 cents per pound.....	United States.
In packages of less than 800 lbs....lbs..	620	420.32	45 cents per pound.....	Do.
Manufactured.....do...	47,849	27,377.98	.....do.....	United States and United Kingdom.
Tobacco pipes, clay....gross..	3,651	2,235.26	$1 per gross.....	United Kingdom and Holland.
Tongues, pickled.....lbs..	13,765	1,880.25	2 cents per pound.....	United States and United Kingdom.
Turpentine.....gals..	5,557	3,012.66	18 cents per gallon.....	Do.
Twine.....lbs..	60,994	11,459.35	2 cents per pound.....	Do.
Varnish:				
Not containing spirits .....gals..	2,372	1,880.55	18 cents per gallon.....	Do.
Containing spirits....do...	1,174	2,055.33	50 cents per gallon.....	Do.
Vegetables, preserved.....lbs..	57,878	5,995.37	2 cents per pound.....	United Kingdom, United States, and Portuguese possessions.
Vinegar:				
In bottles.....gals..	97	45.40	25 cents per gallon.....	United Kingdom.
Do.....do...	6,533	1,796.93	10 cents per gallon.....	United Kingdom, French West Indies, and Holland.
In barrels .....do...	301	199.28	25 cents per gallon.....	United Kingdom and Holland.
Do.....do...	1	3.60	72 cents per gallon.....	United Kingdom.
Wax:				
Bees' .....lbs..	536	148.64	6 cents per pound.....	Do.
Mineral and paraffin.do...	367	35.56	2 cents per pound.....	United Kingdom and United States.
Whiting.....do...	9,099	26.26	Half a cent per pound...	United Kingdom.
Wine and spirits and patent medicines containing spirits:				
Wines—				
In barrels:				
Claret.....gals..	4,217	3,136.25	50 cents per gallon.....	United Kingdom, France, and Portuguese possessions.
Do...do...	50	100.70	80 cents per gallon.....	United Kingdom.
Tarragona.do...	13,810	5,809.28	50 cents per gallon.....	Do.
Do...do...	26,021	12,107.04	80 cents per gallon.....	Do.
Other kinds..... gals..	5,147	7,947.65	.....do.....	United Kingdom, Portuguese possessions, Newfoundland, and Holland.
In bottles:				
Claret—				
Quarts.doz..	458	1,150.34	$1 per dozen.....	United Kingdom, France, and Holland.
Pints...do...	1,404	1,814.56	50 cents per dozen.....	United Kingdom, France, Germany, and United States.
Quarts.do...	87	442.98	$2 per dozen.....	United Kingdom and France.
Pints...do...	268	739.46	$1 per dozen.....	Do.
Other kinds—				
Quarts.doz..	1,554	9,600.13	$2 per dozen.....	United Kingdom, France, Portuguese possessions, and Germany.
Pints...do...	1,610	7,666.90	$1 per dozen.....	United Kingdom, France, Holland, and United States.

Table showing the imports at Demerara for the year ended December 31, 1891—Continued.

Articles.	Quantity.	Value entered.	Rate of duty.	Countries whence imported:
Wine and spirits, etc.—Continued.				
Brandy.....gals..	17,314	$56,444.51	$2.50 per gallon.....	United Kingdom, France, and Germany.
British spirits.....do...	511	2,450.78	.....do.....	United Kingdom.
Foreign spirits.....do...	56	269.84	.....do.....	United States and France.
Gin.....do...	24,155	29,459.72	.....do.....	Holland and United Kingdom.
Whisky.....do...	19,459	41,710.31	.....do.....	United Kingdom, British North America, and United States.
Liqueurs and cordials .....gals..	1,770	13,658.34	.....do.....	United Kingdom, British West Indies, Holland, Germany, and France.
Do.....do...	11	105.04	$4 per gallon.....	United Kingdom, United States, Holland, Germany, and France.
Perfumed spirits.....do...	1,446	12,232.70	$3 per gallon.....	United Kingdom.
Naphtha and methylic alcohol.....gals..	306	273.08	50 cents per gallon.....	Do.
Do.....do...	6	17.96	$2.50 per gallon.....	United States and British North America.
Patent medicines containing spirits.....gals..	90	2,041.82	.....do.....	Do.
Yeast and yeast cakes....lbs..	1	.24	6 cents per pound.....	United Kingdom.
Blankets, dress materials, flannels, piece goods, prints, sheetings, shoes and boots, shirts and shirtings, tablings, ticks or mattresses, tweeds, underclothing, hardware, and cutlery and tools (January 1 to March 31).	.....	301,680.06	7 per cent ad valorem...	Principally from the United Kingdom and dependencies; only a small proportion from the United States.
Miscellaneous articles:				
January 1 to March 31...	.....	163,064.80	10 per cent ad valorem...	About 50 per cent from the United States, 25 per cent from foreign countries, and the balance from the United Kingdom and dependencies.
April 1 to December 31..	.....	1,646,950.05	8 per cent ad valorem...	About 25 per cent from the United States, 20 per cent from foreign countries, and the balance from the United Kingdom and dependencies.
Free of duty, such as manures, ground provisions, salt, fresh meats and vegetables, ice, sheep, poultry, machinery, sewing machines, potatoes, printing materials for periodicals and newspapers, presses, types, etc.	.....	1,460,435.12	.....	30 per cent from the United States, about 20 per cent from foreign countries, and the balance from the United Kingdom and dependencies.
Goods bonded for exportation and transshipped.	.....	108,344.16	.....	40 per cent from the United States, 25 per cent from Dutch Guiana, and the balance from the United Kingdom and other countries.

RECAPITULATION.

Description.	Value entered.	Duties collected.
Goods paying specific duty	$4,307,640.74	$1,074,098.89
Goods paying 7 per cent ad valorem	301,680.06	21,117.60
Goods paying 10 per cent ad valorem	163,064.80	16,306.48
Goods paying 8 per cent ad valorem	1,646,950.05	131,756.48
Wines and spirits	209,179.39	203,241.59
Goods admitted free	1,460,435.12	.....
Goods liable to duty bonded for exportation or transshipped	108,344.16	.....
Total	8,197,294.32	1,446,520.56
Imports from the United Kingdom	4,451,507.79	.....
Imports from British colonies	1,519,984.13	.....
Imports from the United States	1,799,689.75	.....
Imports from other countries	426,112.65	.....
Total	8,197,294.32	.....

Table showing the exports from Demerara for the year ended December 31, 1891.

Articles.	Quantity.	Value, including costs and charges.	Countries whither exported.
Arrowroot.....pounds...	35,942	$1,320.00	French Guiana.
Balata:			
Native.....do.....	116,337	32,672.30	United Kingdom.
Foreign.....do.....	179,620	43,196.90	Do.
Beef.....barrels...	709	8,749.89	Dutch Guiana, French Guiana, and French West Indies.
Bran.....bushels...	14	5.74	French Guiana.
Bread, biscuits, and crackers:			
Native.....pounds...	44,080	2,670.40	British West Indies and Dutch Guiana.
Foreign.....do.....	21,473	1,482.81	British West Indies, East India, Dutch Guiana, Dutch West Indies, and French Guiana.
Bricks.....number...	3,000	74.50	Dutch Guiana.
Buckets and palls.....dozens...	61	146.24	Do.
Bullion:			
Raw gold—			
Native.....ounces...	101,298	1,801,389.24	United Kingdom.
Foreign.....do.....	303	5,256.95	Do.
Coin.....	.....	206,020.06	United Kingdom, British West Indies, and France.
Butter.....pounds...	22,523	3,201.34	British West Indies, Dutch Guiana, French Guiana, and Venezuela.
Candles:			
Tallow.....do.....	1,900	200.64	Dutch Guiana.
Other.....do.....	2,142	296.11	United Kingdom and Dutch Guiana.
Cattle:			
Native.....number...	86	2,115.47	Dutch Guiana.
Foreign.....do.....	44	1,640.47	French Guiana.
Cement.....barrels...	69	178.48	Dutch Guiana.
Charcoal, native.....bags...	54,754	36,759.89	British West Indies and Bermuda.
Cheese.....pounds...	1,033	156.76	Dutch Guiana and French Guiana.
Chocolate.....do.....	220	33.60	British West Indies.
Cigars and cigarettes.....do.....	57	242.70	United Kingdom, British West Indies, British North America, and Dutch Guiana.
Coals, loose, for ships' stores.....tons...	3,167	14,894.75	British West Indies, Dutch Guiana, French Guiana, Venezuela, and Portuguese possessions.
Cocoa:			
Native.....pounds...	50,443	6,514.66	United Kingdom.
Foreign.....do.....	18,040	14,894.75	United Kingdom, United States, and British possessions.

Table showing the exports from Demerara for the year ended December 31, 1891—Continued.

Articles.	Quantity.	Value, including costs and charges.	Countries whither exported.
Cocoanuts, native.....number...	184,659	$6,514.66	United Kingdom.
Coffee:			
Native.....pounds...	9,633	1,964.80	Do.
Foreign.....do.....	8,389	2,459.59	French Guiana and Dutch Guiana.
Confectionery, foreign.....do.....	1,044	115.26	Do.
Cordage (ship stores), foreign.....cwts...	24	178.96	United Kingdom, Dutch Guiana, and French Guiana.
Corks, foreign.....pounds...	4,963	298.88	British West Indies, Dutch Guiana, and French Guiana.
Corn:			
Native.....bushels...	484	386.88	British West Indies.
Foreign.....do.....	1,644	1,351.28	British West Indies, Dutch Guiana, French Guiana, and Venezuela.
Corn brooms, foreign.....dozens...	49	85.80	Dutch Guiana.
Corn meal and oatmeal, foreign.pounds...	62,308	1,341.05	Dutch Guiana and French Guiana.
Donkeys, foreign.....number...	2	50.05	Dutch Guiana and the United States.
Fiber, native.....pounds...	23,235	674.47	United Kingdom and British West Indies.
Fish, foreign:			
Dried.....cwts...	5,168	22,227.14	British West Indies, Dutch Guiana, and French Guiana.
Pickled.....barrels of 200 pounds...	50	560.14	Dutch Guiana.
Mackerel.....do.....	23	91.14	Dutch Guiana and British West Indies.
Herrings and other kinds.....do.....	101	325.50	Dutch Guiana, British West Indies, and French Guiana.
Smoked.....pounds...	877	34.50	Dutch Guiana.
Preserved in tins.....do.....	13,167	2,007.83	Dutch Guiana, British West Indies, and French Guiana.
Firewood, native.....cords...	353	750.83	British possessions.
Flour, foreign.....barrels...	10,675	55,800.35	British possessions, Dutch Guiana, French Guiana, and Venezuela.
Ganja, foreign.....pounds...	350	214.50	Dutch Guiana.
Garlic, foreign.....do.....	7,435	515.50	Dutch Guiana, British West Indies, and French Guiana.
Ghee, foreign.....do.....	32,174	3,399.64	Dutch Guiana and British West Indies.
Ginger, foreign.....do.....	5,317	356.14	United Kingdom and Dutch Guiana.
Grain, not enumerated, and pulse, foreign.....bushels...	7,350	11,612.58	British West Indies, Dutch Guiana, French Guiana, and French West Indies.
Ground feed, foreign.....do.....	42	35.50	Dutch Guiana.
Gums other than balata, native..pounds...	5,074	737.39	United Kingdom.
Hams, bacon, etc., foreign.....do.....	10,543	743.71	Dutch Guiana and French Guiana.
Hay, foreign.....do.....	5,272	74.25	Do.
Hides:			
Foreign.....number...	2,672	4,194.62	British West Indies and French West Indies.
Native.....do.....	7,775	10,036.37	French West Indies.
Hoops, foreign:			
Iron.....cwts...	35	126.14	Dutch Guiana.
Wood.....number...	1,800	35.40	Do.
Horses, foreign.....do.....	2	470.40	Dutch Guiana and British West Indies.
Isinglass, native.....pounds...	5,612	1,771.40	United Kingdom.
Lard, foreign.....do.....	10,425	931.25	British West Indies and French Guiana.
Lime, foreign:			
Building.....bags...	43	30.20	Dutch Guiana.
Temper.....puncheons...	91	586.20	Do.
Lumber (pitch and white pine), foreign.....feet...	246,831	5,822.43	Dutch Guiana, French Guiana, and British West Indies.
Machinery, foreign.....	.....	1,116.60	United Kingdom and British West Indies.
Malt liquor:			
In wood, foreign.....gallons...	150	49.60	Dutch Guiana.

Table showing the exports from Demerara for the year ended December 31, 1891—Continued.

Articles.	Quantity.	Value, including costs and charges.	Countries whither exported.
Malt liquor—Continued.			
In bottles—			
Quarts.....dozens...	240	$274.60	Dutch Guiana.
Pints.....do.....	4,161	3,512.01	Dutch Guiana, British West Indies, and French Guiana.
Manures, foreign.....tons...	64	816.01	Dutch Guiana and British West Indies.
Matches, foreign.....gross...	1,390	599.57	Do.
Meats preserved in tins, foreign .....pounds...	3,930	514.32	Dutch Guiana, East India, and French Guiana.
Molasses:			
Foreign.....puncheons...	322	4,630.65	British North America, United States, French Guiana, and Portuguese possessions.
Native.....do.....	13,989	212,492.91	British possessions, Holland, French Guiana, French West Indies, and Portuguese possessions.
Milk preserved in tins, foreign..pounds...	5,616	539.55	Dutch Guiana and French Guiana.
Mules, foreign.....number...	3	790.55	Do.
Muskets and guns, foreign.....do.....	3	120.55	Do.
Oats, foreign.....bushels...	4,479	3,404.90	Dutch Guiana, French Guiana, and British West Indies.
Oils, foreign.....gallons...	14,814	3,485.40	British possessions, Dutch Guiana, French Guiana, French West Indies, and Venezuela.
Old copper, brass, lead, etc., foreign .....pounds...	415,774	6,134.97	United Kingdom, British North America, United States, and French West Indies.
Old iron, foreign.....tons...	80	400.97	British North America.
Oleomargarine, foreign.....pounds...	17,400	2,005.80	Dutch Guiana.
Onions, foreign.....do.....	463,982	11,963.09	British West Indies, Dutch Guiana, Dutch West Indies, French Guiana, French West Indies, and Venezuela.
Opium, foreign.....do.....	1,375	5,859.20	Dutch Guiana and French Guiana.
Paints, foreign.....cwts...	66	384.97	British possessions, Dutch Guiana, and Venezuela.
Paper (straw), foreign.....reams...	599	167.93	Dutch Guiana and French Guiana.
Pepper (black), foreign.....pounds...	1,483	160.36	Do.
Pistols, foreign.....number...	2	25.36	Dutch Guiana.
Pitch, foreign.....barrels...	21	60.40	Do.
Plantains, native.....bunches...	130	65.40	British West Indies.
Pork, foreign.....barrels of 200 pounds...	618	8,037.75	Dutch Guiana and French Guiana.
Potatoes, foreign.....barrels...	1,346	4,054.99	Dutch Guiana, French Guiana, British West Indies, French West Indies, and Venezuela.
Rice, foreign.....pounds...	1,837,402	39,486.90	Do.
Rum:			
Foreign.....puncheons...	80	4,000.00	Colombia and the United Kingdom.
Native.....do.....	22,101	1,281,435.30	United Kingdom, British possessions, Holland, Dutch West Indies, French West Indies, French Guiana, Colombia, Danish West Indies, United States, and France.
Sago, foreign.....pounds...	45	1.80	Dutch Guiana.
Salt, foreign.....barrels...	366	486.27	Dutch Guiana and French Guiana.
Sheep, foreign.....number...	4	50.27	French Guiana.
Shingles, native.....do.....	5,419,100	18,511.85	French Guiana, French West Indies, British West Indies, and Dutch Guiana.
Shooks, foreign.....packs...	200	204.10	Dutch Guiana.
Shot, foreign.....pounds...	3,732	209.22	Dutch Guiana and French Guiana.
Soap, foreign.....do.....	31,195	1,182.66	Dutch Guiana and British West Indies.
Spices and seeds (not garden seeds), foreign.....pounds...	7,717	396.63	Dutch Guiana, French Guiana, and French West Indies.

Table showing the exports from Demerara for the year ended December 31, 1891—Continued.

Articles.	Quantity.	Value, including costs and charges.	Countries whither exported.
Starch:			
Foreign.....pounds...	18,502	$586.30	French Guiana.
Native.....do.....	1,600	90.20	Do.
Staves, foreign:			
W. O.....number...	60,000	3,300.20	British West Indies and French West Indies.
R. O.....do.....	195,200	8,640.20	Do.
Sugar:			
Refined, foreign.....pounds...	5,477	309.77	French Guiana.
Not refined—			
Foreign...tons of 2,240 pounds...	406	23,098.52	United Kingdom and United States.
Native.....do.....	116,969	7,982,158.33	United States (two-thirds, valued at $5,316,450.49), the United Kingdom (not quite one-third), British North America, and foreign countries.
Sugar bags, foreign.....bales...	22	723.74	Dutch Guiana.
Tallow, foreign.....pounds...	9,226	527.10	Do.
Tar, foreign.....barrels...	40	123.30	Do.
Tea, foreign.....pounds...	4,835	847.22	Dutch Guiana, United States, and French Guiana.
Timber, native.....cubic feet...	312,801	96,329.62	United Kingdom, British West Indies, and Belgium.
Tobacco, foreign:			
Leaf.....pounds...	17,032	1,068.14	United States, Dutch Guiana, and Haiti.
Manufactured.....do.....	2,864	691.12	British West Indies, Dutch Guiana, East India, and French Guiana.
Tobacco pipes (clay), foreign.....gross...	108	81.80	East India and Dutch Guiana.
Turpentine, spirits of, foreign...gallons...	8	9.50	Dutch Guiana.
Unenumerated items:			
Foreign.....	.....	102,552.57	United Kingdom, British possessions, Dutch Guiana, French West Indies, French Guiana, and the United States.
Native.....	.....	8,409.91	United Kingdom, British possessions, Dutch Guiana, French West Indies, and French Guiana.
Varnish, foreign.....gallons...	50	56.44	Dutch Guiana.
Vegetables preserved in tins, foreign .....pounds...	300	27.44	Do.
Vinegar, foreign.....gallons...	125	47.45	Dutch Guiana and British West Indies.
Wines and spirits:			
Wines—			
In barrels.....do.....	5,264	2,731.97	United Kingdom, Dutch Guiana, and British West Indies.
In bottles:			
Quarts.....dozens...	34	261.80	British West Indies, United States, and Dutch Guiana.
Pints.....do.....	3	16.24	Dutch Guiana.
Brandy, foreign.....gallons...	680	1,263.25	United Kingdom, Dutch Guiana, United States, Venezuela, and British West Indies.
Gin, foreign.....do.....	162	359.50	British possessions and the United States.
Liqueurs and cordials—			
Foreign.....do.....	32	191.50	British possessions and Dutch Guiana.
Native.....do.....	80	180.50	British possessions and Germany.
Whisky, foreign.....do.....	16	53.27	British possessions, Dutch West Indies, Portuguese possessions, and the United States.
Perfumed spirits, foreign.....do.....	228	377.28	British possessions, United States, Dutch Guiana, and Dutch West Indies.
Total.....	.....	12,156,261.24	

RECAPITULATION.

To—	Foreign exports.	Colonial exports.	Total.
United Kingdom	$236,481.39	$5,622,005.89	$5,858,487.28
British colonies	131,205.24	282,526.89	413,732.13
United States	6,908.69	5,316,689.87	5,323,598.56
Other countries	282,243.15	278,200.12	560,443.27
Total	656,838.47	11,499,422.77	12,156,261.24

NAVIGATION.

Table showing the number and tonnage of vessels entered at the port of Demerara during the year 1891.

From—	Steamers.		Sailing vessels.		Total.	
	No.	Tons.	No.	Tons.	No.	Tons.
British.						
United Kingdom	24	17,877	17	11,038	41	28,915
United States	.....	.....	28	8,700	28	8,700
British West Indies	82	91,791	126	13,379	208	105,170
British East India	.....	.....	9	12,782	9	12,782
Canada	.....	.....	42	5,799	42	5,799
Newfoundland	.....	.....	4	587	4	587
French West Indies	1	808	46	4,071	47	4,879
Madeira	1	887	1	320	2	1,207
Azores	2	1,558	.....	.....	2	1,558
Dutch Guiana	6	5,151	50	2,943	56	8,094
French Guiana	.....	.....	11	1,226	11	1,226
Bermuda	.....	.....	1	147	1	147
Brazil	.....	.....	2	667	2	667
West coast of Africa	.....	.....	1	198	1	198
Dutch West Indies	1	897	.....	.....	1	897
Total	117	118,969	338	61,857	455	180,826
Norwegian.						
United Kingdom	.....	.....	34	14,434	34	14,434
Brazil	.....	.....	2	658	2	658
Argentine Republic	.....	.....	1	498	1	498
Belgium	.....	.....	1	294	1	294
Total	.....	.....	38	15,884	38	15,884
American.						
United States	.....	.....	62	28,532	62	28,532
British West Indies	.....	.....	5	1,860	5	1,860
French West Indies	.....	.....	2	598	2	598
British North America	.....	.....	2	612	2	612
Teneriffe	.....	.....	1	245	1	245
Rio de Janeiro	.....	.....	1	612	1	612
Dutch Guiana	.....	.....	2	719	2	719
Total	.....	.....	75	33,178	75	33,178
Dutch.						
British West Indies	17	18,646	14	892	31	19,538
Dutch Guiana	15	16,322	3	166	18	16,488
French Guiana	.....	.....	1	60	1	60
Holland	.....	.....	1	356	1	356
Total	32	34,968	19	1,474	51	36,442

Table showing the number and tonnage of vessels entered, etc.—Continued.

From—	Steamers.		Sailing vessels.		Total.	
	No.	Tons.	No.	Tons.	No.	Tons.
French.						
British West Indies	11	7,451	2	1,429	13	8,880
French Guiana	20	5,296	.....	.....	20	5,296
Dutch Guiana	1	202	.....	.....	1	202
Bolivar (Venezuela)	10	2,020	.....	.....	10	2,020
French West Indies	.....	.....	2	1,520	2	1,520
United Kingdom	.....	.....	3	1,296	3	1,296
Total	42	14,969	7	4,245	49	19,214
Danish.						
Denmark	.....	.....	2	460	2	460
United Kingdom	.....	.....	2	510	2	510
Total	.....	.....	4	970	4	970
Austrian.						
United Kingdom	.....	.....	1	496	1	496
German.						
United Kingdom	.....	.....	1	317	1	317
Brazil	.....	.....	1	556	1	556
Total	.....	.....	2	873	2	873
Swedish.						
United Kingdom	.....	.....	2	1,012	2	1,012
France	.....	.....	1	335	1	335
Total	.....	.....	3	1,347	3	1,347
Portuguese.						
Portugal	.....	.....	3	387	3	387
Madeira	.....	.....	5	1,504	5	1,504
Teneriffe	.....	.....	5	901	5	901
Total	.....	.....	13	2,792	13	2,792

Table showing the number and tonnage of vessels cleared from the port of Demerara during the year 1891.

To—	Steamers.		Sailing vessels.		Total.	
	No.	Tons.	No.	Tons.	No.	Tons.
British.						
United Kingdom	19	16,219	14	9,174	33	25,393
United States	17	16,537	54	26,384	71	42,921
British West Indies	60	67,607	124	11,783	184	79,390
British East India	.....	.....	4	6,048	4	6,048
Canada	.....	.....	20	2,387	20	2,387
French West Indies	.....	.....	55	4,492	55	4,492
Madeira	2	2,050	.....	.....	2	2,050
Azores	4	3,358	.....	.....	4	3,358
Dutch Guiana	2	1,790	59	2,004	61	3,794
French Guiana	.....	.....	12	1,344	12	1,344
Dutch West Indies	.....	.....	3	465	3	465
Venezuela	1	1,486	.....	.....	1	1,486
Spanish West Indies	7	7,266	3	874	10	8,140
Haiti	.....	.....	2	367	2	367
Colombia	.....	.....	2	310	2	310
Danish West Indies	.....	.....	1	190	1	190
Mexico	.....	.....	1	296	1	296
Total	112	116,313	354	66,118	466	182,431

Table showing the number and tonnage of vessels cleared, etc.—Continued.

To—	Steamers.		Sailing vessels.		Total.	
	No.	Tons.	No.	Tons.	No.	Tons.
Norwegian.						
United Kingdom	.....	.....	18	6,797	18	6,797
Brazil	.....	.....	1	269	1	269
Belgium	.....	.....	1	449	1	449
British West Indies	.....	.....	11	4,320	11	4,320
United States	.....	.....	6	3,299	6	3,299
Haiti	.....	.....	1	336	1	336
Mexico	.....	.....	1	244	1	244
Danish West Indies	.....	.....	1	427	1	427
Total	.....	.....	40	16,141	40	16,141
American.						
United States	.....	.....	53	23,827	53	23,827
British West Indies	.....	.....	14	7,655	14	7,655
Mexico	.....	.....	1	336	1	336
Danish West Indies	.....	.....	2	756	2	756
Venezuela	.....	.....	1	170	1	170
Total	.....	.....	71	32,744	71	32,744
Dutch.						
British West Indies	15	16,304	11	620	26	16,924
Dutch Guiana	17	18,629	3	166	20	18,795
French Guiana	.....	.....	2	120	2	120
French West Indies	.....	.....	3	180	3	180
Total	32	34,933	19	1,086	51	36,019
French.						
British West Indies	9	6,059	2	1,429	11	7,488
French Guiana	31	9,288	.....	.....	31	9,288
Bolivar (Venezuela)	10	2,020	.....	.....	10	2,020
French West Indies	.....	.....	1	388	1	388
United States	.....	.....	1	641	1	641
Haiti	.....	.....	1	484	1	484
United Kingdom	.....	.....	1	358	1	358
Total	50	17,367	6	3,300	56	20,667
Danish.						
British West Indies	.....	.....	3	749	3	749
Austrian.						
United States	.....	.....	1	496	1	496
German.						
British West Indies	.....	.....	2	1,500	2	1,500
Swedish.						
United Kingdom	.....	.....	1	289	1	289
British West Indies	.....	.....	2	829	2	829
Total	.....	.....	3	1,118	3	1,118
Portuguese.						
Portugal	.....	.....	5	1,049	5	1,049
Madeira	.....	.....	8	1,946	8	1,946
Total	.....	.....	13	2,995	13	2,995

Table showing the number and tonnage of vessels entered, etc.—Continued.

From—	Steamers.		Sailing vessels.		Total.	
	No.	Tons.	No.	Tons.	No.	Tons.
French.						
British West Indies	11	7,451	2	1,429	13	8,880
French Guiana	20	5,296	.....	.....	20	5,296
Dutch Guiana	1	202	.....	.....	1	202
Bolivar (Venezuela)	10	2,020	.....	.....	10	2,020
French West Indies	.....	.....	2	1,520	2	1,520
United Kingdom	.....	.....	3	1,296	3	1,296
Total	42	14,969	7	4,245	49	19,214
Danish.						
Denmark	.....	.....	2	460	2	460
United Kingdom	.....	.....	2	510	2	510
Total	.....	.....	4	970	4	970
Austrian.						
United Kingdom	.....	.....	1	496	1	496
German.						
United Kingdom	.....	.....	1	317	1	317
Brazil	.....	.....	1	556	1	556
Total	.....	.....	2	873	2	873
Swedish.						
United Kingdom	.....	.....	2	1,012	2	1,012
France	.....	.....	1	335	1	335
Total	.....	.....	3	1,347	3	1,347
Portuguese.						
Portugal	.....	.....	3	387	3	387
Madeira	.....	.....	5	1,504	5	1,504
Teneriffe	.....	.....	5	901	5	901
Total	.....	.....	13	2,792	13	2,792

Table showing the number and tonnage of vessels cleared from the port of Demerara during the year 1891.

To—	Steamers.		Sailing vessels.		Total.	
	No.	Tons.	No.	Tons.	No.	Tons.
British.						
United Kingdom	19	16,219	14	9,174	33	25,393
United States	17	16,537	54	26,384	71	42,921
British West Indies	60	67,607	124	11,783	184	79,390
British East India	.....	.....	4	6,048	4	6,048
Canada	.....	.....	20	2,387	20	2,387
French West Indies	.....	.....	55	4,492	55	4,492
Madeira	2	2,050	.....	.....	2	2,050
Azores	4	3,358	.....	.....	4	3,358
Dutch Guiana	2	1,790	59	2,004	61	3,794
French Guiana	.....	.....	12	1,344	12	1,344
Dutch West Indies	.....	.....	3	465	3	465
Venezuela	1	1,486	.....	.....	1	1,486
Spanish West Indies	7	7,266	3	874	10	8,140
Haiti	.....	.....	2	367	2	367
Colombia	.....	.....	2	310	2	310
Danish West Indies	.....	.....	1	190	1	190
Mexico	.....	.....	1	296	1	296
Total	112	116,313	354	66,118	466	182,431

Table showing the number and tonnage of vessels cleared, etc.—Continued.

To—	Steamers.		Sailing vessels.		Total.	
	No.	Tons.	No.	Tons.	No.	Tons.
Norwegian.						
United Kingdom	.....	.....	18	6,797	18	6,797
Brazil	.....	.....	1	269	1	269
Belgium	.....	.....	1	449	1	449
British West Indies	.....	.....	11	4,320	11	4,320
United States	.....	.....	6	3,299	6	3,299
Haiti	.....	.....	1	336	1	336
Mexico	.....	.....	1	244	1	244
Danish West Indies	.....	.....	1	427	1	427
Total	.....	.....	40	16,141	40	16,141
American.						
United States	.....	.....	53	23,827	53	23,827
British West Indies	.....	.....	14	7,655	14	7,655
Mexico	.....	.....	1	336	1	336
Danish West Indies	.....	.....	2	756	2	756
Venezuela	.....	.....	1	170	1	170
Total	.....	.....	71	32,744	71	32,744
Dutch.						
British West Indies	15	16,304	11	620	26	16,924
Dutch Guiana	17	18,629	3	166	20	18,795
French Guiana	.....	.....	2	120	2	120
French West Indies	.....	.....	3	180	3	180
Total	32	34,933	19	1,086	51	36,019
French.						
British West Indies	9	6,059	2	1,429	11	7,488
French Guiana	31	9,288	.....	.....	31	9,288
Bolivar (Venezuela)	10	2,020	.....	.....	10	2,020
French West Indies	.....	.....	1	388	1	388
United States	.....	.....	1	641	1	641
Haiti	.....	.....	1	484	1	484
United Kingdom	.....	.....	1	358	1	358
Total	50	17,367	6	3,300	56	20,667
Danish.						
British West Indies	.....	.....	3	749	3	749
Austrian.						
United States	.....	.....	1	496	1	496
German.						
British West Indies	.....	.....	2	1,500	2	1,500
Swedish.						
United Kingdom	.....	.....	1	289	1	289
British West Indies	.....	.....	2	829	2	829
Total	.....	.....	3	1,118	3	1,118
Portuguese.						
Portugal	.....	.....	5	1,049	5	1,049
Madeira	.....	.....	8	1,946	8	1,946
Total	.....	.....	13	2,995	13	2,995

Table showing the arrivals and departures of American vessels at Demerara during the year ended December 31, 1891.

Name of vessel.	Tons.	Entered.		Cargo.		Cleared.	
		Date.	From—	Inward.	Outward.	Date.	To—
Sunlight	355	Jan. 2	Guadeloupe	Ballast	Sugar	Jan. 8	New York.
Nelson Bartlett	637	Jan. 8	Boston	Ice and iced provisions	do	Jan. 30	Delaware Breakwater.
Albert Shultz	473	do	New York	Breadstuffs	do	Jan. 19	New York.
Scud	329	Jan. 13	Barbados	Flour (barrels)	do	Jan. 23	Do.
Minnie Abbe	327	Jan. 19	Fernandina	Lumber	Ballast	Feb. 7	St. Thomas.
Skobeleff	590	Jan. 20	Barbados	Oak staves	Sugar	Feb. 4	Delaware Breakwater.
Sparkling Water	303	Jan. 21	St. John, N. B	Lumber	do	Feb. 12	Do.
Haluna	330	Jan. 24	Fernandina	do	Ballast	Feb. 6	Fernandina, via St. Thomas and Barbados.
Jefferson	309	Jan. 26	St. John, N. B	do	do	do	Barbados.
Rising Sun	332	Jan. 30	New York	Breadstuffs	Sugar	Feb. 3	New York.
Edward S. Stearns	321	Feb. 2	Jacksonville, Fla	Lumber	do	Mar. 3	Delaware Breakwater.
Ethel V. Boynton	703	Feb. 11	New York	Breadstuffs	Ballast	Feb. 27	Trinidad.
Sarah & Ellen	553	do	Rockport	Ice and iced provisions	Sugar	Mar. 14	Delaware Breakwater.
Bertha Warner	429	Feb. 16	New York	Breadstuffs	Ballast	Feb. 23	St. Thomas.
Morning Light	257	do	Barbados	Ballast	Sugar	Feb. 28	New York.
Sunlight	355	Feb. 21	New York	Breadstuffs	do	Feb. 28	Do.
Benj. C. Frith	844	Mar. 9	Boston	Ice and iced provisions	Ballast	Mar. 25	Trinidad.
Clytis	416	Mar. 11	Baltimore	Breadstuffs	Sugar	Mar. 24	Delaware Breakwater.
Celia F	392	Mar. 17	Fernandina	Lumber	do	Apr. 11	Philadelphia.
Shetland	612	Mar. 23	New York	Breadstuffs	do	Apr. 14	Do.
H. S. Langfair	383	Apr. 7	Jacksonville	Lumber	do	Apr. 28	Baltimore.
Morning Light	257	Apr. 11	New York	Breadstuffs	do	Apr. 15	New York.
Sunlight	355	Apr. 20	do	do	do	Apr. 24	Do.
Albert L. Butler	327	do	do	do	do	May 4	Philadelphia.
Seth M. Todd	185	Apr. 21	Wilmington, N. C	Lumber	do	do	Delaware Breakwater.
Addie Morrill	631	Apr. 30	Rockport	Ice and iced provisions	do	May 19	Philadelphia.
Nantasket	496	May 1	New York	Breadstuffs	do	May 22	Delaware Breakwater.
Elbridge Souther	658	May 23	Boston	Ice and iced provisions	Ballast	June 5	Turks Island.
Morning Light	257	May 29	New York	Breadstuffs	Sugar	June 6	New York.
Ann E. Valentine	245	June 9	Teneriffe	Vegetables and wine	Ballast	June 28	Barbados.
Briscilla	612	June 28	Rio de Janiero	Ballast	Sugar	June 29	Philadelphia.

Sunlight	355	June 19	New York	Breadstuffs	do	June 24	New York.
J. F Merry	448	June 24	do	do	do	July 11	Philadelphia.
Teneriffe	518	do	do	do	Ballast	July 10	Turks Island.
Benj. C. Frith	844	July 6	Boston	Ice and iced provisions	do	July 16	Trinidad.
City of Baltimore	339	July 16	Georgetown, S. C	Lumber	do	Aug. 10	Do.
Elvina	336	July 18	New York	Breadstuffs	do	July 24	Mexico.
S. R. Bearse	577	July 20	Rockport	Ice and iced provisions	do	July 31	Turks Island.
Morning Light	257	do	New York	Breadstuffs	Sugar	July 24	New York.
Clotilde	445	July 23	do	do	do	July 31	Delaware Breakwater.
Sunlight	355	Aug. 11	do	do	do	Aug. 15	New York.
E. O. Clark	656	Aug. 18	Rockport	Ice and iced provisions	do	Sept. 8	Baltimore.
Martha T. Thomas	750	Aug. 19	Boston	do	Ballast	Aug. 31	Trinidad.
Hancock	392	do	New York	Breadstuffs	Sugar	Sept. 1	Delaware Breakwater.
Eugene Hale	421	Sept. 1	Paramaribo, D. G	Ballast	do	Sept. 9	Do.
Frank M. Howes	170	Sept. 4	Baltimore	Breadstuffs	Ballast	Sept. 10	Baltimore, via Orchilla.
Edward Johnson	380	Sept. 7	New York	do	Sugar	Sept. 16	Delaware Breakwater.
Starlight	243	Sept. 19	do	do	do	Sept. 23	New York, via Porto Rico.
Elbridge Souther	658	Oct. 1	Rockport	Ice and iced provisions	Ballast	Oct. 14	Turks Island.
Davis Eckhoff	530	Oct. 3	New York	Breadstuffs	Sugar	Oct. 20	Delaware Breakwater.
Nelson Bartlett	637	Oct. 6	Boston	Ice and iced provisions	Ballast	Oct. 15	Turks Island.
John F. Kranz	473	do	New York	Breadstuffs	Sugar	Nov. 5	Philadelphia.
St. Croix	222	Oct. 10	do	do	do	Oct. 21	Do.
Arcot	381	Oct. 12	do	do	do	Oct. 23	Delaware Breakwater.
Albert Shultz	473	do	do	do	do	Oct. 24	Do.
Henry Clausen, jr	522	Oct. 22	do	do	do	Nov. 6	Philadelphia.
Scud	329	Oct. 28	Barbados	Ballast	do	Nov. 2	New York.
Beatrice Havener	525	Nov. 4	New York	Breadstuffs	do	Nov. 19	Philadelphia.
Benj. C. Frith	844	Nov. 7	Boston	Ice and iced provisions	do	Nov. 25	New York.
Odorilla	397	Nov. 11	New York	Breadstuffs	do	Nov. 21	Boston.
Stephen Bishop	281	Nov. 12	Norfolk, Va	Lumber	Ballast	Nov. 27	Richmond, Va.
Morning Light	257	Nov. 18	New York	Breadstuffs	Sugar	Nov. 24	New York.
Olive Pecker	832	Nov. 20	Rockport	Ice and iced provisions	do	Dec. 11	Philadelphia.
Starlight	243	Nov. 30	Martinique	Ballast	do	Dec. 3	New York.
R. F. Pettigrew	885	Dec. 2	Boston	Ice and iced provisions	do	Dec. 28	Delaware Breakwater.
Susie P. Oliver	259	Dec. 4	Jacksonville	Lumber	do	Dec. 22	Do.
Shawmut	445	Dec. 5	New York	Breadstuffs	do	Dec. 24	Do.
Sunlight	355	Dec. 9	Barbados	Ballast	do	Dec. 16	New York.
Norambega	295	do	New York	Breadstuffs	do	Dec. 31	Delaware Breakwater.

Table showing the arrivals and departures of American vessels at Demerara during the year ended December 31, 1891—Continued.

Name of vessel.	Tons.	Entered.		Cargo.		Cleared.	
		Date.	From—	Inward.	Outward.	Date.	To—
						1892.	
Ella M. Storer	427	Dec. 11	New York	Breadstuffs	Sugar	Jan. 4	Delaware Breakwater.
Alicia B. Crosby	1,065	Dec. 21	Boston	Ice and iced provisions	Ballast	Jan. 14	Cuba.
Major Pickards	935	Dec. 23	Rockport	do	Sugar	Jan. 26	Delaware Breakwater.
Sarah H. Stetson	298	Dec. 31	Paramaribo, D. G.	Ballast	do	Jan. 6	Do.
Edward Stewart	378	do	New York	Breadstuffs	Ballast	Jan. 15	Brunswick, Ga.
Albert Shultz	473	do	do	do	Sugar	Jan. 5	New York.
Total	33,178						

CONCLUSION.

It is proper to say that much hereof has been gleaned from conversations with gentlemen of the colony of various shades of opinion. In many cases I have endeavored to use their exact words touching matters of the colony. Especially is this true of the portion thereof referring to the "colored man." Indeed, I have endeavored to use the opinions of others rather than my own, unless where they appeared too prejudiced. While nearly a year's residence in the colony enables me to speak somewhat intelligently upon the subject, I deemed it more valuable to embody the views of colonists of many years' standing, thoroughly conversant with the subject, and, like myself, thoroughly unprejudiced. From personal observation I can truly say that the great majority of the colored race in this colony is different from the colored race in the United States, and not at all comparable to the latter. I have met colored men, however, whose superiors in intelligence and ability it would be difficult to find, and whose manners a Chesterfield could not excel; but this class, unfortunately, does not predominate. Most of the lawyers and doctors here are colored men, and certainly they will compare favorably with many and excel some of their brethren of the white race in the same vocations here or elsewhere.

The present mayor of Georgetown is a colored man, as was also his immediate predecessor, both lawyers and very able men. Besides the lawyers and doctors, there are two or three remarkably able newspapers conducted by colored men in this city, papers which, in the judgment of many, are as ably conducted as the leading paper of the city of Georgetown.

PHILIP CARROLL,
Consul.

UNITED STATES CONSULATE,
Demerara, May 4, 1892.

THE FUTURE OF THE TIN-PLATE INDUSTRY.

REPORT BY CONSUL HOWARD, OF CARDIFF.

I have the honor to transmit herewith a clipping from the South Wales Daily News, containing an interview with Mr. J. H. Rogers, the managing partner of Messrs. E. Morewood & Co., who have recently established a tin-plate manufactory in the United States. As Mr. Rogers is chairman of the Tin-Plate Makers' Association here, and has recently returned from his mission to the United States in connection with the establishment of his firm's tin-plate enterprise there, I think his views upon the future of the tin-plate industry in the two countries may be of general interest.

WALTER E. HOWARD,
Consul.

UNITED STATES CONSULATE,
Cardiff, July 13, 1892.

THE FUTURE OF THE TIN-PLATE TRADE.

INTERVIEW WITH MR. J. H. ROGERS.—AMERICA AND THE WELSH STAPLE.—MR. ROGERS ON LABOR AGITATORS.

[Inclosure in Consul Howard's report.—From the South Wales Daily News, July 13, 1893.]

A couple of months ago we announced that Messrs. E. Morewood & Co., proprietors of the South Wales and Cwmbwrla Tin-Plate Works, and a few other Welsh makers contemplated erecting tinning departments in the United States, with the object, presumably, of realizing the difference between the duty on finished and black plate, which is about 2*s.* 6*d.* upon each box. Subsequent inquiries proved that Messrs. Morewood & Co. were about laying the foundations of such an establishment within a few miles of New York, and a few weeks ago Mr. J. H. Rogers, the managing partner, proceeded to the United States in connection with the matter. He returned last week, and, believing that Mr. Rogers (whose views as chairman of the Tin-Plate Makers' Association carry considerable weight) might offer an opinion upon the subject and upon the trade generally, our reporter waited upon him at the offices of the South Wales Works, Llanelly, a day or two since. Reference was first made to the passing of the tin-plate bill (which provides that the duty on tin and terne plates shall, after the 1st of October, be 1 cent per pound, and that the tariff be altogether taken off after October 1, 1894) on Friday last by the House of Representatives; and Mr. Rogers was asked whether he thought it would be accepted by the Senate. The reply was that it was altogether a political move, and that the House of Representatives itself didn't anticipate the Senate would pass it. Even if it did, it was very probable that President Harrison would exercise his veto against it, in support of which it was pointed out that Mr. McKinley was chairman of the convention when President Harrison was nominated for the Presidency, and spoke very strongly in favor of the tariff, at the same time pointing out its advantages. In all probability the bill would be rejected by the Senate if it was placed before it, which was questionable.

"As a result of your recent visit to the United States, can you give some idea of the prospects of the Democratic party in view of the coming presidential election?" our representative inquired of Mr. Rogers.

"Well," was the reply, "it is generally regarded that the fight will be an exceedingly close one. The Republicans say they will certainly return their President, and the Democrats, on the other hand, are equally confident. The general opinion is that the Democrats can not win unless they carry New York State, but the Republicans may possibly win, even if they lose that State. The parties are so closely balanced that it is really impossible to say which will win."

"Supposing Mr. Cleveland were elected, what do you think would be the effect of his policy?"

"I think the result would be that the duties would be gradually lowered, and that wages would consequently fall. The working classes would, of course, not be willing to remain without work, and manufacturers would have to reduce wages to enable them to compete successfully with other countries. Wages in America are at present about double what they are here, but if America adopted free trade they would probably be reduced by one-half, and become equal to the wages paid here. The question of free trade or protection in America is, therefore, of far more importance to the working class of America than it is to any class in this country. In America the working class earn high wages at present, and the cost of living there is so little more than it is here that they have much greater comfort and are able to save more rapidly."

Our reporter here reminded Mr. Rogers of the statements that had often been made during the last twelve months as an argument to prevent the tin-platers of Wales to emigrate to America, that the heat and the cost of living was much greater in the United States than in our own country.

Mr. Rogers replied that as a matter of fact such was not the case. True, house rent was higher there, but the necessities of life to workingmen and their families were very cheap. The best class of clothing was also more expensive, but that for workingmen was not. The weather was exceedingly hot during his visit, and one of the first things Mr. Rogers did was to purchase a cool, thin suit, which cost him 52*s.*, which he didn't think he could get as cheap in this country. Then, as to the heat, those who went to America got so accustomed to it that they didn't mind it more than they would here. One day while he was there the temperature was 105° in the shade; the next day it was 103°, while another day it was 96°, so that on the whole it was quite pleasant. Upon being asked whether the belief generally entertained here was correct, viz, that the weather at times became so extremely hot that men engaged in steel, iron, and tin works were obliged to relinquish work for more or less prolonged periods, Mr. Rogers replied that these men worked as steadily there during the hot weather as they did here. Referring to the cost of living, Mr. Rogers instanced the case of a Llanelly tin-plate worker, for whom he had found employment, who told him that not only was he in a position to live comfortably upon the wages he earned about 36*s.* a week, but he was able to send about half of it to his family at home.

Conversation then ensued upon the condition of trade in South Wales, Mr. Rogers declaring that it was really worse now than it was twelve months ago, which was proved by the number of works which were either partially or wholly idle. He could not account for it, and feared that a bad period had set in, while he could see no prospect of a change.

Mr. Rogers was then asked whether he had read the recent utterances of Mr. D. Randell, M. P., who declared that the action of Messrs. Morewood & Co. in erecting works in the United States before waiting to see the results of the November elections was not only "selfish and suicidal," but also "ill-timed, misjudged, and unpatriotic." Mr. Rogers smiled in reply, and added that his attention had been called to the honorable member's speech.

"The unpatriotic people," proceeded Mr. Rogers, "are those who set class against class and labor against capital, and it is those whom the working classes ought to blame for the depression which is settling down upon our manufactures. Fifteen months ago, when interviewed by a reporter, I said as follows:

"'All such methods of propping up wages rates as limiting the make to so many boxes in a given time will have to be thrown to the wind, and all will have to do their best to make the greatest use of the appliances and materials at their disposal. If the men will not make the best and most economical use of their arms we shall be compelled to displace them by machinery, or move our works to other countries, where materials and labor and tariffs will enable us to carry on our business profitably.'

"My warning and advice have not been heeded, and I am not, under those circumstances, to blame that the results which I predicted have been fulfilled."

"Well," interposed the interviewer, "would you mind telling me what induced the firm to erect such works in America?"

"Our action is by no means entirely due to the McKinley bill. I know perfectly well that the day must come when the duty will be reduced in America, and I don't think that the majority of the voters, who are workingmen, are so shortsighted as to think it would be to their benefit that the duties should be at present reduced. To erect works now, trusting to the high duty imposed by the McKinley bill, would be very unwise."

"How can you reconcile this statement with your action?"

"What really carried weight with us in our decision to erect works in America was the doctrines and actions of the leaders of the workingmen. They cry out against capital, denounce it as an evil to the country, and say they must crush it. We capitalists on our part say: 'Very well; if you don't like to have us in the country, and you, who are the majority of the voters, wish to have such laws as will injure and hamper us in the conduct of our manufactures, we will go to other countries where the value of capital is appreciated by all classes, and every inducement held out to us to erect works and to invest our capital.' Many of our politicians coquette with labor and other questions, instead of, as true friends should,

pointing out to the working classes the folly of the course they pursue. I don't so much blame the genuine workingman leader, but, owing to want of knowledge and experience, he takes too local and narrow a view of trade questions, and acts and advises as if Great Britain were the whole world. She is only a very small part of the manufacturing world, and has not now the advantages she used to have; rather the contrary."

"Have you commenced erecting your works near New York?"

"Oh, yes; but we do not anticipate starting operations until October."

"Supposing the present tariff is maintained, will the fact of its being so affect South Wales and the Cwmbwrla works?"

"We don't anticipate stopping our works here whatever happens; at any rate, so far as our steel works and mills are concerned. The best evidence of that is that we are putting up in them more modern and perfect machinery. We intend making a hard fight to keep our works here and at Cwmbwrla running. Our American works are what is called in sporting terms a 'hedge,' so that if the actions of the leaders of the working people and the houses of Parliament make it unprofitable for us to carry on our works in this country, we shall still be able to be large manufacturers. If the presidential election had been a month ago, and if Mr. Cleveland had been elected, it would make no difference whatever to what I say."

Referring to the remark made before a public audience that it was "unpatriotic" on the part of the firm to erect works instead of waiting until November, Mr. Rogers observed that the November elections, however they might go, would have no effect upon what they were doing. As he had said before, the McKinley tariff was only a secondary cause for their action. "Capital," he added, "is sensitive and timid, and will always flow to the countries which offer most security and the freest opportunities for untrammeled development, and where capital is most abundant there will be the greatest prosperity, most regular employment, and most happiness."

Proceeding, Mr. Rogers remarked that some of the Democrats said: "We are quite prepared to admit that if the duties are reduced wages will have to be correspondingly reduced, but our aim is that wages shall be so far reduced that our manufacturers can undersell Europe in neutral markets, such as India, Australia, etc.; but we believe that the cost of living and of luxuries should also be so reduced that workmen would be as well off at the lower wages as they are now at the higher wages."

"Are there any other works in course of erection in America now?"

"Yes, there are several. When President Harrison was chosen, Mr. McKinley gave figures showing that there were twenty-five tin-plate works either built or in course of erection, the accuracy of which I can not confirm, as I only visited a few. The manufacture of tin plates is, however, very rapidly taking root in the United States, and some very magnificent plants have been erected. In one works which I visited was the finest plant which I have ever seen. An enormous steel and tin plate concern is being built in Chicago."

"Does this plant dispense with any of the manual labor necessary here?"

The interview closed with the remark that it did, and to a very great extent.

COTTON IN EGYPT.*

REPORT BY ACTING CONSUL-GENERAL GRANT, OF CAIRO.†

It appears that cotton was known to the ancient Egyptians. In ancient times it grew here in a wild state. Herodotus mentions a plant which bore flowers of a pinkish color and a fibrous fruit. It is thought that the seed

*Samples of Egyptian cotton which accompanied this report have been transmitted to the Department of Agriculture.

†I have obtained most of the information contained in this report from the General Produce Association of Alexandria, the president of which very kindly responded to my inquiries.—L. B. G.

came from the far East, as the plants gave a woolly product of short and weak staple. It was only in the early part of the present century that the cultivation of cotton began to extend and exotic seed to be imported. Mako and Jumel were the names given to the new product, which was of a white color and of long staple. Mako was the name of a large landed proprietor who especially lent himself to the culture of the new cotton. Jumel was the name of a French agriculturist who first imported seed from America. In France Egyptian cotton is still called Jumel.

As an article of export cotton dates from the year 1821, but during thirty-five years the quantity varied only from 150,000 to 500,000 cantars (cwts. of 98 pounds). A great stimulus was given to this culture by the Viceroy Mehemet Ali. It is said that he planted all the seed he could get on his own land with successful results, and, being stimulated by the high price obtained for the new fiber in the European markets, he encouraged its cultivation throughout Lower Egypt, the soil and climate of which were found to be admirably adapted to its growth.

It was in 1837–'38 that this culture really began to take serious proportions. Abbas Pasha I still further encouraged it. In 1860 the export duty was reduced from 10 per cent to 1 per cent ad valorem, which, of course, helped to stimulate the culture; but the great impetus was given by the American civil war, the high prices at that period causing the cultivation to be pushed to the utmost limits.

Up to our days the Mako-Jumel has experienced many changes and evolutions, which are attributed to the nature of the soil. The color gradually became a yellowish brown, and took the name of Ashmouni, from the village of Ashmoun, where this change was first noted.

VARIETIES.

The present varieties of Egyptian cotton as known to commerce are the following: Ashmouni, Mit-Afifi, Abiad, Bamieh, and Gallini.

Ashmouni.—For many years this quality formed the bulk of the Egyptian crop, but it is now almost entirely superseded by Mit-Afifi. In color it was of a lightish brown, lighter than the Mit-Afifi, and with a staple rather over 1 inch in length. It is still cultivated in some parts of Lower Egypt, notably in the neighborhood of Mehala-el-Kebir, but the acreage of this quality is decreasing every year. In Upper Egypt, however, it is more extensively cultivated, as the nature of the soil there is less favorable to the Mit-Afifi cotton.

Mit-Afifi.—The seed of this cotton was discovered by a Greek merchant living in the village of Mit-Afifi, where he first planted it and whence it derives its name. The seed has a bluish-green tuft at the extremity, which first attracted his attention. On planting this seed he found that it possessed many advantages over the Ashmouni. It matured earlier and was therefore much less susceptible to damage from the salt fogs, which are very often prevalent in September. Its chief superiority, however, consisted in the

greater proportion of lint yielded to the seed. At first the cantar of 315 rotols (pounds) yielded about 112 rotols of lint, and sometimes even more; but now it has deteriorated and rarely gives so much, generally averaging 106 to 108 rotols. Ashmouni rarely attains 98 rotols. The finder kept the secret for some years, but it ultimately became known. The Mit-Afifi is of a darker and richer brown than the Ashmouni. It is of excessive strength, but, except in some districts, the staple is not longer than that of Ashmouni. The districts where it has longer staple are about Cafr Zayat, Chibin-el-Koom, and notably Birket-es-Sab.

Abiad.—Abiad, as its name indicates, is white cotton, and is chiefly grown at Zifta, Mit-Gamr, and, to a smaller extent, at Birket-es-Sab. In other districts it is only grown sporadically, and even in the districts above mentioned it is rapidly giving way to Mit-Afifi. The staple is much longer than that of American cotton, the bulk reaching about 1 inch in length, while some fine lots are to be found having a length of 1¼ and even 1½ inches. The yield is 105 to 112 rotols.

Bamieh.—This quality is yearly degenerating. The form of the tree is quite different from the other varieties of cotton, being tall and not bushy. It is supposed to have been produced by accidental hybridization of the Ashmouni cotton tree and the Bamieh plant, as it resembles the latter in several points. Its chief charactistics are great length, fineness, and silkiness of staple and a rather lighter color than Ashmouni, but generally a greater weakness of staple. The tree, however, is more delicate than the other varieties, and is therefore very susceptible to September fogs. It yields about 100 to 105 rotols of lint per cantar of 315 rotols. The chief districts now producing the best quality of this variety are: First, Mansoorah; second, Semenood; and then Mehala-el-Kebir.

Gallini.—This variety has almost entirely disappeared from cultivation, as the quality had deteriorated to such an extent that it became most difficult to sell. Only one small lot of 122 cantars appeared in the Alexandria market this year, and, I am informed, is still unsold. It has been said that this variety was originally produced from imported Sea Island seed, but I am informed by competent authority that this is an error. It was first found accidentally at a place called Galleen, in the province of Garbieh, about the year 1863 on land belonging to Haidar Pasha, and from there it spread all over that province. Attempts at cultivation in other districts were not successful, which proved that its proper development depended entirely on the quality of the soil. Though very fine, silky, and strong, it differed greatly from Sea Island, being of a brown color instead of white. Many attempts have been made to introduce the culture of Sea Island cotton in Egypt by importing seed from the United States, but all experiments failed. Although the cotton produced was very long and fine, it was so weak in staple that all spinners condemned it.

Other varieties.—New varieties are continually springing up. Just now a variety called Hamouli is coming into the market. This is strong and of

a good mellow brown color, but not so long in staple as Mit-Afifi. Here again the chief incentive to its culture is the good yield of lint. So far, however, the amount cultivated is extremely small. Another variety called Zeplyri is also spoken of, but nothing is yet known of this, as only a few cantars were known to exist last year. There is also another variety, of which very little is known yet, because the possessors of the seed keep the matter secret. This resembles Sea Island much more than Gallini, having all the requisite characteristics and the same white color.

PLANTING AND CULTIVATION.

Planting takes place in March and April. In this connection I can not do better than quote McCoan. He says, in "Egypt as It Is" (p. 189):

> The cultivation of the plant, of whichever variety, differs slightly according as the ground sown is *balieh, i. e.*, watered solely by annual inundation, or *miscoweh*, which is not thus fully irrigated, but requires to be artificially watered several times before and after seed-sowing. In Lower Egypt, where the land is fatter and stronger than above Cairo, one plowing generally suffices before seed time, but in the upper valley two at least are necessary; deep if the soil be light, but shallower where it is heavy. Small patches of ground are hoed where the cultivator can not afford the cattle power required for the plow. The ground being next leveled with the hoe or a rude kind of harrow, furrows are made about 2 feet apart, in which, at intervals of some 3 feet, holes are drilled 3 or 4 inches deep. Into each of these the sower drops half a dozen seeds, which he covers in with earth and waters (or not), and the operation is complete. The *balieh* lands are thus sown in March and the *miscoweh* in April. Near the towns vegetables are generally planted between the furrows, to make the most of the ground; where this is not done the plants are thinned and earthed up by plowing between the ridges.

The cotton fields are artificially watered about eight times during cultivation, generally by bringing the Nile water between the ridges on which the plants are growing, thus saturating the soil completely. The general ripening of the pods begins in September (but the Mit-Afifi ripens about a month earlier), and the cotton is ready for the first picking in October. A second picking takes place in November or at the beginning of December and a third in January and February.

The wages of pickers are: For men, from 20 to 30 cents per diem; for children, about 15 cents per diem.

After the last picking the cotton trees are generally pulled up and used for fuel. In some few instances they are only cut down close to the ground, and a second crop is produced from the same plants. This second crop, however, is not as good as the first, and it is becoming a universal custom to use fresh seed for every crop. In the interval between the last picking and the new sowing the cotton fields are sown with "berseem," or Egyptian clover, which grows quickly and can be removed in time for the next cotton planting. Continuous growing of cotton on the same lands impoverishes the soil, and the quality of the product deteriorates year by year. For this reason it is customary to follow a kind of rotation system. For example, cotton is rarely grown on the same lands for more than two years in succession, and in most cases for not more than one year. The second or third

year, as the case may be, these lands are devoted to cereals or some crop which does not injure the soil and which aids it to recover its good qualities. By some growers rice is considered the best crop to grow in the interval. During its cultivation the soil regains its strength, on account of its continual submersion.

The best producing lands are those which are left two years under light crops and planted with cotton only every third year.

AREA.

The total area planted with cotton during the season 1890–'91 was 855,479 acres, and during the season 1891–'92 it was 831,241 acres. This area will probably be increased in proportion as more lands are brought under irrigation. As the means of irrigation are being improved year by year, it is probable that in time there will be a considerable increase in the production of cotton, as it is one of the best-paying crops. It is thought that next season's crop will be still larger than that of last year, although it is impossible to give any idea of the exact increase of area.

PRICES.

During the last cotton season prices have been very low. It will be observed by a glance at the following table that only on four previous occasions have the prices of Egyptian cotton been so depressed, viz, in the years 1843, 1845, 1848, and 1851.

Table showing the exportation and average price of cotton from 1821 to 1892.

Year	Average price per cantar.*	Exports.
		Cantars.†
1821	$16.00	908
1822	15.50	35,108
1823	15.50	159,426
1824	17.00	228,078
1825	13.00	218,312
1826	13.00	216,181
1827	13.00	159,642
1828	13.00	59,255
1829	12.00	104,920
1830	12.00	213,585
1831	10.50	186,675
1832	15.00	136,127
1833	25.00	56,067
1834	30.75	143,892
1835	25.25	213,604
1836	18.50	243,230
1837	13.00	315,470
1838	15.00	238,833
1839	18.25	194,097
1840	13.00	159,301
1841	13.25	193,507
1842	10.00	211,030
1843	7.75	261,064

* Reduced from piasters tarif; 1 piaster tarif = 5 cents.

† 1 cantar = 98 pounds.

Table showing the exportation and average price of cotton from 1821 to 1892—Continued.

Year.	Average price per cantar.	Exports.
		Cantars.
1844	$18.00	153,363
1845	6.00	344,955
1846	10.25	202,040
1847	10.00	257,492
1848	7.25	119,965
1849	10.00	257,510
1850	11.75	364,816
1851	8.75	384,439
1852	10.25	670,129
1853	10.00	477,390
1854	9.00	477,905
1855	9.25	520,886
1856	10.75	539,885
1857	16.25	490,960
1858	12.75	519,537
1859	12.00	502,645
1860	12.25	501,415
1861	14.00	596,200
1862	23.00	721,052
1863	36.25	1,181,888
1864	45.00	1,718,791
1365	31.75	2,001,169
1866	35.25	1,288,762
1867	22.50	1,260,946
1868	19.00	1,253,455
1869	23.00	1,289,724
1870	19.50	1,351,797
1871	15.75	1,966,215
1872	21.00	2,108,500
1873	18.55	2,013,433
1874	16.15	2,575,648
1875	14.95	2,206,443
1876	18.85	3,007,719
1877	13.70	2,439,157
1878	12.25	2,583,610
1879	13.60	1,680,595
1880	24.05	3,123,515
1881	14.35	2,792,184
1882	13.75	2,846,237
1883	15.00	2,293,537
1884	13.50	2,686,382
1885	12.55	2,591,486
1886	11.00	2,904,842
1887	12.00	3,025,965
1888	13.75	3,593,327
1889	16.00	2,648,640
1890	13.40	3,496,108
1891	11.50	4,159,405
1892	8.75	4,750,000

I am informed by the Alexandria General Produce Association that this fall in prices is entirely attributable to the enormous crop in America. I must add, however, that the last Egyptian crop was the largest ever produced, reaching 4,750,000 cantars. Therefore, the low prices can be attributed to the general overproduction of the world.

The cost of production on large farms in Egypt is about $5.74 to $12.17 per acre, exclusive of the land tax, which varies from $1 to $7.41 per acre. The small Arab cultivator, who works with his family on his 3 or 4 feddans, can produce cotton much cheaper. The average production of lint per acre is about 340 pounds, but good lands will yield as much as 700 pounds.

Owing to the absence of any regular statistics it is difficult to say exactly what is the cost of land in Egypt. There is no sort of relation between the value of land and its taxation. I am informed that the highest rate common for cotton lands in Lower Egypt is $7.50 to $8 per acre. With that tax good lands sell for $100, $150, and, in rare cases, even for $200, but on many inferior lands this tax is so crushing that they are almost unsalable.

GINNING, PRESSING, ETC.

The cotton gins used in Egypt are Platt's patent roller gins. The total number of ginning mills throughout Upper and Lower Egypt is about one hundred. They are distributed in all the chief cotton centers. Large towns like Mansoorah, Zagazig, Cafr Zayat, Tantah, and Mehala-el-Kebir have from ten to twenty mills each. There are hydraulic presses attached to nearly all the mills, so that the cotton comes from the mills to Alexandria in hydraulic-pressed bales. Only about four of the interior mills have steam presses. With the exception of the bales sent from these four mills all the cotton is steam pressed in Alexandria before exportation. From two or three places cotton is still sent to Alexandria in bags of about 2½ cantars each, but the bale system is increasing every year.

During the busiest season, say during October, November, December, and January, most of the larger mills work night and day. In this case there are two relays of employés who work twelve hours each, turn and turn about. When business slackens the working hours are from fifteen to sixteen per day, beginning at 6 a. m. and ending at 9 p. m. But in these cases only one set of hands is employed, whose daily wages are reckoned at the rate of one and one-third days to the day of fifteen to sixteen hours. Wages vary a good deal, according to the district, namely, from 10 to 25 cents per diem for ordinary hands. As the season comes gradually to a close the mills work very irregularly.

GENERAL REMARKS.

The large cotton merchants are nearly all resident in Alexandria. They send their agents among the villages to purchase the cotton from the various growers. It is then sent to the nearest mills, where it is ginned and pressed in hydraulic bales, after which it is transported by rail or boat to Alexandria. Here it is pressed in steam presses into bales weighing from 750 to 780 pounds, and measuring about 20 cubic feet. It is then ready for exportation.

It will be noticed that America is not mentioned among the other countries in the table of exportation. This is because almost all the cotton ex-

ported from Egypt to America is shipped via England, especially Liverpool, where it is transshipped. The figures in the table of exportation to the United States are taken from the invoice books of the consulate-general at Cairo and the consular agency at Alexandria, where all invoices of merchandise shipped from Egypt to the United States are certified. They may therefore be considered accurate. There are doubtless some purchases of Egyptian cotton made in England for the American market, but such shipments would figure in the exports from England.

The cotton shipped to the United States is used for mixing and for making thread.

LOCAL CONSUMPTION.

The only consumption of cotton in Egypt is for stuffing pillows and mattresses. This need not be taken into account for statistical purposes, as it is chiefly cotton waste.

EXPORTATION.

The following table shows the exportations to various countries during the years 1884 to 1889:

Table showing the quantity and value of cotton exported from Egypt to various countries from 1884 to 1889.

Countries.	1884.		1885.		1886.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Cantars.		*Cantars.*		*Cantars.*	
England	2,029,027	$27,679,995	1,847,581	$22,150,830	1,869,292	$22,123,890
Russia	242,797	3,248,540	518,245	6,279,650	450,171	5,198,140
France and Algeria	293,324	3,600,135	250,657	3,052,135	266,150	3,130,655
Austria-Hungary	222,808	2,987,295	247,411	3,049,965	245,245	2,796,895
Italy	201,723	2,692,660	206,876	2,690,325	163,403	1,882,505
Spain	63,055	840,945	88,106	1,089,285	29,988	359,845
Other	20,796	139,175	30,145	219,815	16,551	112,130
Total	3,073,570	41,188,745	3,188,821	38,531,995	3,040,803	35,604,060

Countries.	1887.		1888.		1889.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Cantars.		*Cantars.*		*Cantars.*	
England	1,956,306	$24,162,815	1,619,444	$20,665,000	2,000,430	$26,763,545
Russia	371,723	4,614,870	375,983	4,744,095	314,353	4,207,845
France and Algeria	234,668	2,888,015	208,314	2,636,650	248,795	3,312,2 0
Austria-Hungary	232,862	2,899.625	253,064	3,173,990	355,446	4,751,080
Italy	216,730	2,555,635	181,495	2,315,415	231,328	3,114,090
Spain	20,792	262,925	28,043	367,990	20,139	266,415
Other	34,532	328,950	25,492	213,415	35,711	323,385
Total	3,067,013	37,712,835	2,691,835	34,116,555	3,206,202	42,738,580

The following table shows the value of exportations of cotton from Egypt to the United States during the nine years ended 1891:

Year.	Value.	Year.	Value.
1883	$3,781	1889	$580,631
1884	25,604	1890	728,052
1885	47,719	1891	2,417,168
1886	9,816	Total	4,117,079
1887	112,577		
1888	291,731		

There were no exports of cotton to the United States during the years 1881 and 1882.

For the quarter ended March 31, 1892, the exports to the United States amounted to $523,725.43.

Table showing the quantity and value of cotton seed exported from Egypt to various countries from 1884 to 1889.

Countries.	1884.		1885.		1886.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Bushels.		*Bushels.*		*Bushels.*	
England	9,481,950	$6,352,730	10,407,518	$6,575,085	11,641,333	$5,928,175
France and Algeria	1,430,487	967,535	926,229	571,200	918,946	480,465
Other	319	240	77,374	49,670	1,689	1,075
Total	10,913,116	7,320,505	11,411,114	7,195,955	12,561,968	6,409,715

Countries.	1887.		1888.		1889.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Bushels.		*Bushels.*		*Bushels.*	
England	11,505,786	$5,834,815	10,503,444	$6,008,680	10,285,843	$6,815,980
France and Algeria	1,015,432	513,260	907,769	538,520	708,157	444,455
Other	71,753	37,175	2,503	1,515	14,239	9,025
Total	12,592,971	6,385,250	11,413,716	6,548,715	11,542,239	7,269,460

LOUIS B. GRANT,
Acting Consul-General.

UNITED STATES AGENCY AND CONSULATE-GENERAL,
Cairo, May 21, 1892.

THE MAGDALENA RIVER AND VALLEY.

REPORT BY CONSUL NICKEUS, OF BARRANQUILLA.

When returning from the United States in 1891, I noticed 50 miles at sea a swift current of muddy water making its way toward the shores of Central America, bearing upon its bosom immense quantities of weeds, flowers, trees, old logs, and other débris. Upon inquiry I learned that this was the Magdalena River (being very high at this season of the year), one of the great rivers of the world—great for its length, its depth, the volume and swiftness of its current, the width and fertility of its valley, its numerous and flourishing towns, and its commerce. The commerce runs up into many millions, and is carried by river craft of every description, from the ancient dugout to as fine river steamers as ply the Mississippi.

This river, owing to its proximity to the United States and the fact that it runs 1,000 miles through the best portion of the Republic of Colombia, must become of great interest to the American people commercially; and it may be of some interest to those who wish to read an authentic and accurate account (which they will not find in atlases or gazetteers) of a great water way within about 1,200 miles of New Orleans, hence this paper.

THE RIVER.

From Barranquilla, near the sea, the distance by the river to Honda is about 615 miles, and from Honda to Neyva about 225 miles. It is navigable at all seasons of the year for steamers of light draft as far as a point called Yeguas (12 miles below Caracoli, the old port of Honda), and above the latter place from 30 to 35 miles in the direction of Neyva to a point called Ambalema. The high-water season steamboats, drawing from 4 to 6 feet, easily go full loaded to Yeguas, and the small steamers plying above Honda then go readily as far as Girardos, Peñalira, and Purificacion, the latter being something like 144 miles above Honda; and sometimes vessels have even gone to Neyva.

Immediately in front of the city of Honda and lying between Caracoli and La Noria (the upper port of Honda), there are some very dangerous rapids or falls, called "el salto de Honda," and over which no steamer can go up stream without using stout hauling lines to aid her machinery and exercising at the same time a great deal of care and precaution in this delicate and really dangerous operation.

Steamers that navigate the river above Honda are steamed and hauled over the "salto," as explained above, and then remain doing service in the upper river until, for repairs or some other necessary cause, they are compelled to take the risk of passing the falls downstream on their return to Barranquilla for their needful docking, overhauling, etc., for which there are no facilities at or near Honda.

It is true that, a few years ago, one or two steamers did go in times of very high water as far as Neyva; but the navigation above Purificacion, due to the exceedingly bad and dry condition of the river, is nowadays confined solely to large and small canoes for upstream, and mostly rafts for downstream service.

The source of the Magdalena is the Laguna del Buey, on the Paramo de las Papas, at the southern extremity of the eastern cordilleras and distant from Neyva about 240 miles, thus making the river's entire length 1,080 miles from its source in the Andes to Barranquilla. The area drained by the Magdalena is estimated at 110,000 square miles. In the lower part of the river it is from three-fourths of a mile to a mile and a quarter in width; but from about half the way to Yeguas it becomes gradually less and less wide, until at Caracoli and Yeguas it is only, one would say, from 200 to 350 yards from bank to bank. The depth immediately in front of Barranquilla is considerable, being from 8 to 14 fathoms; but a few leagues further up shoal places are now and again met with, and when above the mouth of the Sogamoro, some 400 miles above Barranquilla, and during very low water the steamboats have sometimes to pass over places here and there having only 3½ feet of water; hence the boats are not loaded to draw at such times more than from 30 to 36 inches of water.

THE UPPER MAGDALENA.

The upper Magdalena is that part of the river comprised between Neyva and Honda, or at best that is what is generally understood by the term. In this part of the river there are many passes that are difficult and dangerous, owing to the many narrow and winding or intricate channels and the rocks in and about them, and in times of very low river there is so little water that above Ambalema the steamers have simply to tie up. The boats go nowadays as far as Girardos only, as a rule, though, when there is occasion for it, they easily go as far as Purificacion, about 36 miles further upstream. There are many *chorros*, or rapids, over which the steamers go in time of good water on their way to Girardos, and all of them are more or less dangerous to steamboat navigation. They are all above Ambalema and are called Colombaima, Jaiamillo, Bizeochuelos, Gallinazos, and Monas. Near Girardos, in sight of the place, is a narrow pass, the Angostura, called "Santa Lucia." From Honda to Girardos is 108 miles.

From all these places come coffee and hides; from Ambalema comes also fine tobacco, ranking in the markets next to that of Cuba.

Ambalema has about 3,000 inhabitants, Girardos about 4,000, and Purificacion about 5,000.

Above Neyva only canoes and rafts navigate the river, and even these for 30 to 40 miles only.

FIRST NAVIGATION OF THE RIVER.

The first navigation of the river by steamboats began under the direction of John B. Elbers, a German, in the year 1824. He obtained from the

Government of the country a concession or monopoly for its navigation by steam vessels; but, after laying out a good deal of money and bringing vessels from Europe for the trade, his contract was broken and rescinded by President Bolivar, the great liberator of South America. By this act the man was ruined and left penniless. Had he been permitted to go on with his enterprise Colombia would be far ahead of what it is to-day. Various companies since that date have been put on foot for this same purpose; some, however, had to give up for want of means, and others sold their vessels to new companies and retired from the business. So it has gone on for many years, new companies forming now and then, and always improving steadily and surely in the class of vessels introduced for the river service and in the manner in which this necessary service is performed.

To-day the Magdalena is navigated by something like twenty-five steam vessels, almost all of them of the most recent and improved models and machinery, and built, for the most part, of galvanized steel either in the United States, England, or Germany, all these countries being represented on the river by vessels which they have built and sent out here in pieces and had put together in Barranquilla or Cartagena. One of these steamers leaves Barranquilla nearly every day for Honda and other points on the river.

The Magdalena River has its banks studded with all kinds and sizes of timber. The banks are constantly caving in and giving way, thus allowing many of the trees to fall into the water and form shoals and, in many cases, islands. Moreover, many of them remain sunken out of sight in mid-channel, and thus make ugly and dangerous snags, which delay and trouble the boats and sometimes cause their utter loss.

Since the beginning of the navigation of the river by steam there have been lost by snagging, running upon rocks, explosions of boilers, etc., more than thirty steamboats. For several years, however, the General Government has had a steam snag boat working on the river, and another, though smaller, steamer has lately been built and is now ready for service as a towboat for lighters and for other purposes (used in the cleaning of the river), so that now there is much hope for the improvement of the river.

The steamboats use only wood as fuel; hence there are many wood yards along the route that, as a rule, are cared for and attended to by the poor people on the banks. Coal is not used, owing, no doubt, to its high price, the duty per ton being about $12. No mines are worked in the country, although there are plenty of them.

About a league below Nare there is a narrow pass, very clear and deep, called the Angostura, about half a mile in length, and something like 150 or 200 yards in width. Through this pass rushes all the water of the river, and when it is much swollen the currents are very strong and difficult to navigate.

THE CAUCA.

The Cauca River empties into the Magdalena about 40 miles above Magangue, and is navigable as far as Nechi for steamers of small draft.

This river has its source near that of the Magdalena, and separates from it widely for a long distance, and finally joins it at the point mentioned above, called Boca de Guamal. Here and there on its inland course before getting thus far it is navigable for short distances, it is said, for very small steamers; but, as the river is not clean, having many snags, rocks, falls, etc., this long and beautiful stream is but little used save by canoes and rafts.

PRINCIPAL TRIBUTARIES.

The principal tributaries of the Magdalena are the Furagarugá, the Prado, the Saldaña, the Plata, the Lagunilla, and the Bogotá above Honda, and at and below this point the Guale, the Guarmo, the Negro, the Miel, the Nare, the Carare, the Sogamoro, the Lebrija, the Cesar, and the Cauca. The Nare is navigable for steamboats, when the river is in tolerable condition, as far as Islitas, a port about 3 miles above the *bodegas* of Nare, at the junction of the river of that name and the Magdalena, and which is an important port as the point at which a great deal of valuable merchandise from abroad is disembarked from the steamers into the *bodegas*, there to be afterwards forwarded to Medellin, Rio Negro, and other cities and *bodegas* in the interior of Antioquia. When this river is in its very dry stage steamers can not go as far as Islitas, and are therefore obliged to leave the cargo at Nare. If relieved from the many snags that abound in them, the rivers Cesar, Sogamoro, and Carare could be utilized—and no doubt for quite a distance—by steamers of light draft. Later on it is likely that this will be done, but as it is at present the cargo and passenger traffic of those streams is performed entirely by canoes and big champans. The Lebrija River is navigable by small steamers something like 60 miles from its mouth to a place called Puerto de Santander, and from there toward the interior of the department of Santander cargo and passengers are carried by canoes.

When I speak of canoes, both large and small are meant to be understood. Some of them are covered over with well-arranged roofs made of straw and are entirely waterproof and more or less safe and comfortable for passengers and cargo.

In the upper river the Furagarugá, the Prado, and the Soldaña rivers are quite large streams, and in time of freshets become very much swollen and more or less wide and deep. Perhaps in the future they may come to be navigated by steamboats, though it is not likely.

TOWNS AND CITIES ON THE MAGDALENA.

Going upstream from Barranquilla the towns of importance on the bank of the river are Sitio Nuevo, of about 2,000 inhabitants and 20 miles from Barranquilla, and Remolino, 6 miles further up and with 2,500 inhabitants. Near these towns there are good pasture lands, and many head of fine cattle are raised thereon.

Next comes Calamar, with about 4,500 inhabitants and distant about 65 miles from Barranquilla. It is situated at the entrance of the dike of Carta-

gena and is of consequence as a relay station between the Magdalena and the port of Cartagena. It also furnishes fresh provisions, poultry, eggs, etc., as well as cattle on the hoof and wood in abundance for the passing steamboats.

Next may be mentioned Buena Vista, Jesus del Rio, and Lambrano. These are small places with but few inhabitants, but quite important as ports for the tobacco districts of the department of Bolivar, and, respectively, distant from Barranquilla 76, 104, and 112 miles.

Magangue, with 3,000 inhabitants and 160 miles from Barranquilla, furnishes general supplies of merchandise, articles of food, etc., to the surrounding country, and is important as the point at which fairs are held three times each year—in February, June, and September—at which all manner of products of the interior and merchandise from the cities of the coast are sold and exchanged. Frequently the business of one of these fairs will reach over half a million. Goods are sold at one fair and collected for at the next. The people from hundreds of miles around gather on these occasions—some to buy, some to sell, and some simply to make merry, running their dances far into the night—and altogether presenting a most interesting sight. On one occasion of this kind I counted along the river at Magangue over six hundred different kinds of water craft, from a little bit of a canoe to a splendid river steamer. The whole thing reminds one of a great camp meeting in the United States, except here the people nearly all travel on burros and in canoes, instead of on horses and in carriages. I was told in Magangue that there was not a wheeled vehicle nearer than Barranquilla.

Mompox, on the Brazo, is on an island of the same name, and is on the opposite side of the island from Magangue. It is quite a pretty, though ancient, city and of much less importance at this time than was the case formerly, owing mainly to the fact that during the dry season there is not sufficient water in the Brazo to admit of its navigation by steamers, as was easily and habitually done in the past. It numbers only about 6,000 inhabitants, many people having moved elsewhere since the Brazo began to be so bad as to affect the trade of the city, nearly all of which has passed over to Magangue, which enjoys greater natural advantages, although while I write it is several feet under water. This means that the Magdalena is 30 feet higher at Magangue than it was when I saw it in February last. Still, at other seasons of the year the Magdalena is "a calm, gracious, generous river, bearing strength in its tide and plenty on its bosom, rolling on through the land slowly and serenely, like a good man's life, and fertilizing wherever it flows."

Then we have Banco, quite a good-sized town of 1,500 inhabitants and distant from Barranquilla 250 miles. It is at the junction of the Magdalena and Cesar rivers, and in time of war is regarded as a strategic point worth holding and fortifying. Here are sold mats made of the straw of the country, some of which are quite pretty and useful; also *loza*, or earthenware, for cooking purposes, holding water, etc.

Then come La Gloria, Puerto Nacional, Bodega de Ocaña or Gumarra, and Bodega Central, places of few inhabitants and distant, respectively, from Barranquilla 285, 307, and 322 miles. They are important, however, as mail stations and as ports for the exportation of much of the products (coffee, hides, caucho, tagua, etc.) of the rich department of Santander, and the introduction to her inland cities of importations from abroad.

Next comes Bodega de Sogamoro, near the mouth of the river of that name. It is composed only of *bodegas* (warehouses) for a portion of the exports and imports of the department of Santander. The principal articles of export are coffee, hides, and caucho, though fine hammocks of grass, as well as of linen and cotton cloth, and certain sorts of sweetmeats are sent to Magangue for sale during the time of the fairs mentioned.

Then may be mentioned Puerto Berrio, Nare, and Islitas, in the wealthy and important department of Antioquia, small places of but few inhabitants, but important as ports for her trade with the rivers. Antioquia, through these ports, exports coffee, hides, and caucho, and receives from abroad large quantities of all sorts of foreign merchandise.

Lastly, in the lower river, comes the port of Yeguas, composed only of *bodegas*, a telegraph office, and a few small buildings for the needs of the employés of the railroad, which is 14 miles long, and which connects Yeguas with Honda. Yeguas is to-day the most important port of Honda for all purposes of its own immediate traffic, as well as that of Bogotá and other ports of the near interior. At this port the river steamers deliver their up cargo, or freight, and take on as their down cargo, or freight, coffee, hides, tobacco, caucho, balsam, and sometimes quinia bark, indigo, panela sugar, etc. Very frequently many boxes of orchids are shipped for Europe and the United States. Formerly an immense quantity of tobacco and quinia were shipped from this point for European and American ports; but, owing to a great fall in the prices of the articles within the last eight or ten years (due perhaps to the falling off of these two articles, and also to the fact that the ruinous tobacco worm presented itself about this time, and the great increase in the amount of quinia raised in India), there is now scarcely any quinia shipped abroad and but small quantities of tobacco. Yeguas is distant from Barranquilla 603 miles.

THE OLD CITIES OF HONDA AND MARIQUITA.

Honda has about 6,000 inhabitants, is 615 miles from Barranquilla, and may still be called (as in the olden days) the immediate port of Bogotá, the capital of the country, and it is still a town of some importance as the business center for the surrounding towns and mining districts, and as a relay station between certain parts of the interior and the coast. Honda is one of the oldest cities in all South America, having been built by the Spaniards in the early days of their occupation of the country. As a rule, its houses are built of stone and brick, and are strong and durable; its streets are narrow and well paved with cobblestones. The river Guali, which divides

Honda in two parts, is now spanned by the railroad bridge, another strong iron bridge for passengers and beasts, and one built of wood for pedestrians.

In the year 1805 Honda was visited by a terrific earthquake, as tradition tells the story, and many first-class buildings, both public and private, were utterly destroyed and razed to the ground. A beautiful and costly bridge, built of stone, after the style of the old Roman bridges, and constructed by the famous Spanish engineers according to the substantial system practiced by them in those days, was also completely annihilated at the same time. The skill of these old Spaniards in engineering and masonry was simply marvelous. The walls of Cartagena, built by these engineers, attest their skill. These walls have defied time. For three hundred years they have withstood the waves of the ocean, which have all these years, as regularly as the pendulum of a clock, dashed and washed their base. In spite of tropical sun and rain these walls still stand as sound and as intact as the day they were completed. They are an enduring monument to the men whose names have perished, but who live and ever shall live in their works.

About 13 miles inland from Honda is situated the old town of Mariquita, once a city of great importance, which was also destroyed by this same earthquake. It is said that at the time of this terrible visitation more than 12,000 persons were killed in Honda and Mariquita. Before the date of the earthquake Honda was a very rich and important city, and boasted of 30,000 inhabitants. It was the center for all sorts of commercial affairs, and had among its population many persons of wealth and position, who lived in great comfort and affluence, and who even acted as commission merchants between that point and Bolivia, Peru, and other important points in South America for all purposes of trade with those distant parts of the Spanish possessions in this part of the world. Since that time, however, the place has never regained what was lost in those days of horror and suffering, and Honda is now simply a small city of about 6,000 inhabitants and only active and of consequence as a commercial center for the surrounding country, through which passes a great part of the merchandise for and from the departments of Tolima, Cundinamarca, and Boyacá, as well as some districts of the department of Antioquia and perhaps of Cauca. It is said that Honda, destroyed by the great earthquake of June 16, 1805, was not less rich nor less populous than Cartagena (with its fortifications which could not have cost less than $75,000,000) and had greater commercial importance than Bogotá.

Dr. Comacho Roldin, in his "Notes of Travel," says of Honda and Mariquita:

> The only description that I have is what I heard almost fifty years ago, on the ground itself, from one of the last surviving witnesses, Mr. Parlo Crespo.
>
> According to him, both sides of the River Guali (which runs through Honda) were lined with magnificent orchards and gardens, behind which were the splendid high houses, residences of these fortunate magnates. Grand ornamental trees, magnificent fruit trees, beautiful spreading palms provided everywhere an agreeable shade—a retreat from the burning sun of the ardent climate. Numerous slaves performed the household service, took charge of the mule packs, and cultivated the fields.

Behind Honda, at the foot of the mountains, some 18 miles distant, lay the city of Mariquita, the royal mining city, to which came and were prepared for shipment the minerals from the central range of mountains. It also served as the summer residence for the families of Honda. This was another city of not less importance than Honda, whose streets were provided—as I myself have seen among the ruins—with sewers or canals of cut stone, through which an abundant water supply came for the use of the city and for irrigating the extensive gardens of the city. Judging by the extent and grandeur of the ruins, this city was at least 1½ miles long by 1 mile wide, and the abundance of fruit trees which yet exist, such as almondros, aguacates, mangoes, canelas, and other rare fruits, give testimony to the opulence of its inhabitants, whose number could not be less than 12,000 or 15,000.

Attempting to form a picture in imagination of this region from the ruins, as well as from the description of Mr. Crespo, it would be like one of those magic Moorish cities, built five or six centuries ago on the sides of the mountains at Malaga, in Spain, under the blue skies of the Mediterranean—a town hid among the foliage, adorned by the feathery tops of the graceful palms, resting under the heavy shade of the ceibas before taking a bath in the laughing waters of the Guali; line upon line of house tops running back terrace above terrace like the hanging gardens of Babylon, and the surrounding hilltops crowned by the imposing masses of convents of the monastic corporations, numerous and rich, which formed such an important element in the social life of that date. One can imagine that he can hear the confused and vague sounds of the common life, the songs of the birds, the calls of the animal life, the vibrations of the bells in the towers, and even the songs of the people, accompanied by the soft bandola and the clearly marked time of the tom-tom. All this ceases. In place of these sounds of life there is heard the grating of rocks and chains, as if drawn over the pavement, and a moment later an underground roll of deep thunder under these mountains, whose dwellers feel a kind of seasickness, and before anyone can think what is happening walls and roofs fall on the miserable people, leaving them crushed in great numbers. There were very few houses left standing. Perhaps from 10,000 to 12,000 people were killed in Honda and Mariquita, and the sound of commercial activity ceased for years, perhaps for ages; and in the cracks of the walls that sheltered man the rootlets of the vines have taken hold to cover with their spreading branches from the view of children the ruined homes of their fathers.

Mariquita was the residence of the Spanish viceroy, and the principal, if not the only, Government mint for coining money in the country was at this place. All this part of the country, including Antioquia, Tolima, and some of Cundinamarca at the least, was then called the "province of Mariquita." This was always in charge of an officer of high rank, who had control of all the rich gold and silver mines lying within its limits, which abounded there, and do so to this day in the near vicinity of the ruined city of Mariquita.

It was here Gonzalo Ximenez de Quesada died at the age of 83 of leprosy. He led an expedition against the Chibcha Indians, and after great hardship captured the cities of Iraca and Tunja, in New Granada, and found a large amount of treasure. He founded the city of Bogotá in 1538. His remains now rest in the cathedral of that city.

PRODUCTS OF THE MAGDALENA VALLEY.

Along the immediate shores or banks of the Magdalena corn is produced in fair quantities, as well as sugar cane, yuca, and plantains, and, in some places, cacao and tobacco; but the little tobacco which one finds planted

in isolated places along the river is of but very small account, as the large tobacco and rice plantations and the coffee and sugar estates are, as a rule, all some distance back from the river. There are also grown along the banks quantities of fruits, and here are to be found fine watermelons, muskmelons, aguacates, marañones, mameyes, zapotes, nisperos, caimitos, guanabanas, bananas, mangoes, pineapples, etc., and here and there oranges and limes. Of course, there are also raised, in many places along the river, chickens, turkeys, ducks, hogs, and horned cattle; but away from the cities—and, in fact, many in the cities—the people of the poorer class live almost entirely upon fruits, fish, and yuca, a kind of bread made from a vegetable root.

THE ENTRANCE TO THE MAGDALENA.

At the mouths of the Magdalena there are ugly shifting bars, which make the entrance into the river by seagoing vessels of much draft very difficult and, in some cases, really perilous, and particularly so owing to the want of proper and sufficient pilots and towboats to bring them in. Indeed, several sailing vessels, some coming in and others going out, have struck and been lost on this bar; and more than one steamer has also touched it, so it is said. Although there are some very intelligent persons in Barranquilla, and among them old pilots, who say that there is sufficient water on the bar to admit ocean steamers, a certain steamship company, which is largely interested in a railroad running from the sea to Barranquilla, had, for its own interest, refused to enter the river for many years before it became part owner of the railroad when there really was no danger with a good pilot.

I am convinced that with proper soundings and a good pilot the river can be entered by ocean steamers. Of course, when this company refused to enter the river all other vessels calling at this port did likewise, not knowing at that time the real motive underlying the whole scheme. From the action of this company the insurance companies took alarm and refused to insure ships or cargo which attempted to enter the river's mouth.

It is of great importance that the real facts regarding the bar at the mouth of the river be known. At different times portions of land near the mouth have been washed off, and certain changes have taken place. Several islands also near Sabanilla and in front of the river's mouth have been entirely swept away. At one time a large body of water went through what is termed the Canal de la Piña, near the sea, and came out into the Bay of Sabanilla. For many years all the freight that passed between Sabanilla and Barranquilla was sent through this "caño," cut by this enormous flood, in bongoes and canoes. After some time, however, this "caño" filled up with sand, old trees, etc., and had to be abandoned. About two years ago, though, the water again began to enter this "caño" with force, but it has not been cleaned nor used in any way.

To-day the mouth considered the best, and indeed the only available one, is that directly out in a straight line with the river, and known as Boca de Cienega.

There is nothing which so retards the development of the valley of the Magdalena as the inability of ocean steamers and sailing vessels to enter the mouth of the river and anchor at Barranquilla. Steamers and sailing vessels now anchor at Puerto Colombia, 18 miles from the custom-house at Barranquilla. The freight is conveyed to and from the vessels by lighters and the railroad at a cost, in many instances, equaling the charges from New York to Puerto Colombia, and still the railway company pays no dividends to its stockholders. If these boats could enter the river's mouth, they could sail upstream during the greater part of the year for a distance of 120 miles and at all seasons from 30 to 40 miles. The Magdalena needs a system of jetties like those at the mouth of the Mississippi. When this is had, the valley will become the most productive and valuable body of land, owing to its proximity to the United States, in all South America. But for this we must wait for other men and other times.

COMMERCE OF THE MAGDALENA.

The exports, imports, and domestic trade passing up and down the river amounts to about $25,000,000 per annum. The exports consist of coffee, tobacco, hides, quinia, caucho, cocoa, fustic, divi-divi, tangua, balsams, emeralds, and gold and silver bullion and ore. The importations are all classes of general merchandise—silk, cotton, and woolen goods; boots and shoes, all kinds of crockery and glassware, implements of agriculture, building material and machinery for vessels and various sorts of manufactories, large quantities of brandies and wine, kerosene oil, etc.

During the last six or seven years the commerce of the country has increased in a most notable manner, and it is still constantly increasing and improving. This great advance in trade is due, it is generally conceded, and which is no doubt the true explanation of the matter, to the peace which now prevails and which has continued to reign throughout Colombia since the year 1885, the date of the last revolution which took place in the country.

Another most singular reason is given for the increase of products in Colombia, viz, that the issue of paper money having driven all gold and silver from circulation, the people who earn a surplus of this paper money do not now hoard it, as they had always done before with silver and gold, but invest it in coffee and rice plantations, believing the latter better things to hold than paper money worth 50 cents in gold to the doliar.

There are now plying upon the Magdalena from Barranquilla nineteen steamboats for cargo and passenger traffic, as well as several steam launches, and from Cartagena three steamboats ply the river, similar to those from Barranquilla. Several others are now in course of construction, however, in these two ports, and within a year's time, more or less, no doubt there will be five or six more steam vessels on the river.

MAGDALENA RAILROADS.

The principal railroad that taps the Magdalena is that known as the Bolivar Railroad, which connects Barranquilla with shipping in the Bay of Sabanilla at a point called Puerto Colombia, distant 17 miles from Barranquilla, and over which passes the greater part of all the merchandise that is received from abroad and which is sent out of the country. Another railroad touches the river at Puerto Berrio, department of Antioquia, and runs 30 miles in the direction of Medellin, the capital of that department, leaving something over 100 miles still to be built of that projected road. Expectations for its speedy completion are not, I believe, very generally entertained. Then there is the road between Yeguas and Honda, in the department of Tolima, 14 miles in length, over which passes a great part of the merchandise introduced into, and exported from, this part of the country. There is still another short road, some 24 miles long, which begins at the port of Girardos, 108 miles above Honda, and which forms part of a proposed road to Bogotá. Many miles of road are still unfinished, however, and for some years past the work on it has ceased altogether; but I am informed that an American company will soon complete the road.

In regard to railroads in process of construction, which are intended to communicate with the Magdalena, most prominent is the road which is to begin at Cartagena, on the coast, and which is intended to come out on the river near the town of Calamar, and which, it is said, is now about to begin operation. Another from Santa Marta is in construction, and is intended to tap the Magdalena at some point above Barranquilla, according to statements of persons interested in the work; but as yet it has only got as far as Rio Frio, a distance of 30 miles from Santa Marta. The road from Honda to Yeguas is also being prepared for extension to Conejo (about 14 miles from Yeguas), and work has already begun upon the new line. When finished, this addition to the Honda road will be of great value and convenience to shippers of cargo as well as to steamboat-owners and the public in general, as Conejo is a good and safe port for steamers, and that of Yeguas, now in use, is bad and inconvenient on many accounts, and has between it and Conejo several passes that are very ugly in time of low water. Another road in projection, and on which the work is to be begun during the present year, is to run from Cambao to Bogotá. The road will be built by the present owners of the Honda and Yeguas road.

LANDS AND WOODS OF THE MAGDALENA.

There are leagues upon leagues of rich and entirely uncultivated lands all along the shores of the river and in its wealthy valley. There are thousands of miles of the country belonging to the Government which are only awaiting occupation and cultivation by anyone who may choose to settle on them. Unfortunately, however, these regions are not very healthy for the white man.

Along the banks and a little back from the river there are virgin forests of enormous extent, and among the many varieties of timber may be found, as the most valuable, the cedar, the mora (fustic), the roble (oak), the guayacan (lignum-vitæ), the caoba (mahogany), the ibano (ebony), red ceiba, granadillo, campana, carreto, canalete, etc. Several of this number are exported in considerable quantities, as the mahogany, cedar, the fustic (which latter is a fine dyewood), and the guayacan (for railroad ties). The others are, for the most part, used in the country for making canoes, furniture, and building purposes in general. Mahogany is so cheap that nearly all the doors and windows in Barranquilla are made of that wood. Yellow-pine flooring is worth more per foot in this market then cedar or mahogany. Mahogany and cedar may be had for the cutting; indeed, any of the woods mentioned.

THE DIKE OF CARTAGENA.

In regard to what is known as the dike of Cartagena, it may be stated that in the days of the early Spaniards that stream was at first a very small but useful body of water running from the Magdalena toward a lake, or "cienaga," inland, called La Cruz, and coming out into the Carribbean Sea after passing through some other cienagas a few leagues below the Bay of Cartagena. It left the river at a point called Barranca Vieja, about a mile and a half above Calamar.

The Spaniards improved this canal, or dike, to a considerable extent, and it was used by them for many years as one of the principal means they had for communicating with the big river. When these colonies revolted against Spain, however, the authorities of the mother country directed the entrance of this stream from the Magdalena to be effectually shut up with layers of stone in order to prevent its use by bongoes, canoes, etc., by the people in revolt; and so well was that work done that to this day those stones are still there, and plainly in sight at low water, and totally unmoved by man, by time, or by the action of the waters of the old Magdalena, which for centuries have beat upon them.

Many years afterwards, about the year 1844, a contract was entered into with the celebrated American engineer Col. George M. Totten to open the dike and put it in navigable condition for steamboats. After proper examination and surveys, Col. Totten selected as a point at which to make his first cutting for the new canal a place about a mile and a half below the old entrance at Barranca Vieja, now called Calamar, of which I have already spoken, and went in almost a straight line from the river for a distance of 6 or 7 miles; then, after leaving a bend, made another cutting of about the same extent, which put him in connection with the waters of the old dike. He was prevented from entirely completing his contract, owing, it has always been said, to want of funds on the part of the present department of Cartagena, or, at any rate, to their failure to furnish the necessary money for the completion of the dike as contracted for. All work on it was then abandoned and given up entirely for many years.

At different times since then various companies have been formed to open the dike and put it in order for navigation by steamboats, and, after many failures, it was taken in hand about ten years ago by Mr. Pedro Velez, of Cartagena, in conjunction, it is said, with the Atlas Line of steamers from New York, and only since then has anything been done of a positive or permanent nature to further and perfect this enterprise.

There is a line of steamers running through the dike from Cartagena to Barranquilla and Honda. Unfortunately, however, for that enterprise, in time of low water the dike is sometimes not navigable by these steamers, and all the work upon it by different contractors in later years has not been sufficient to overcome this difficulty.

THE MAGDALENA DURING THE REVOLUTION.

In the latter days of the revolution made against Spain by its subjects in this country there were several naval combats on the Magdalena between the two contending parties, there being then in use only the bongoes and canoes of that day. Two of the most important of these very bloody battles took place at or near Barbacoas and Teneriffe, which resulted in the utter defeat and rout of the Spaniards; and these signal victories on the water, coupled with simultaneous successes on shore, were mainly instrumental in driving the Spaniards to the towns on the coast, and no doubt subsequently compelled them to withdraw entirely from the country.

The Opon River, one of the tributaries of the Magdalena, though rather small in dimensions, is famous as the river up which the celebrated Spanish leader Gonzalo Ximenez de Quesada made his ascent on his first voyage of discovery and conquest, and upon whose banks he found food and rest for his famishing and dying followers.

THE ISLANDS OF THE MAGDALENA.

There are a great number of islands in the Magdalena, and some of them are quite large and of considerable value and importance. Mompox, as an example, is situated on the island of that name. It extends from Boca Tacaloa to the Banco, a distance of about 76 miles by the Brazo of Mompox and about 105 miles by the Cauca River and the Brazo de Loba. It is inhabited and cultivated in almost its entire length. Another large island extends from a little below the Banco to a little above the town of Rejidor, is about 34 miles long, with many towns and wood stations along its banks. The island of Morales, which separates the Brazo de Ocaña from the Brazo de Morales, is something like 45 miles in length and has on its shores the important port of Bodega Central and other small towns or stations for wood, etc. There are other rather large islands also, as Los Gomez (in front of Barranquilla), Cabica, Lara, Guaimaro, and others much smaller, many of which are private property. All of these islands are well supplied with wood and water, and offer good pasture grounds for cattle, as well as for raising all manner of vegetables and fruits, rice, and sugar cane.

FISH, BIRDS, AND REPTILES OF THE MAGDALENA.

In the Magdalena there are numbers of fish for food, much sought for and very generally used in the country. Notable among them I mention the bagre, dorada, the doncella, and boeachico. The ferocious crocodile, or alligator, also abounds. Its food is almost entirely fish, it never touching anything in the shape of carrion.

Birds line the whole course of the river—some of most beautiful plumage. Parrots, paroquets, macaws, kingfishers, the beautiful garzas of white plumage and of four or five sizes, various kinds and sizes of the pretty humming bird, the toche, the ruisefior or nightingale, the mochuelo, azulejo, canary birds of the country, the rich cardinal, and many others are seen as one journeys along the river. Various kinds of wild ducks, too, as well as wild turkeys, partridges, doves, paujels, and the guacharaca (a species of pheasant), are quite abundant.

There are many reptiles of the most venomous type in the woods, swamps, and fields. They are sometimes even met with near to and within inhabited places. Among the worst kinds known in the country are the cascabel or rattlesnake, the equis, the coral, the birre, the boa, and several kinds of mapaná.

In the woods along the banks of the river are also frequently seen numbers of monkeys springing among the branches. A sort of wild hog, known as the "ponche," is often met with on the banks of the river.

I have purposely omitted an account of Barranquilla, the principal seaport of Colombia. This will be given in a separate paper.

ACKNOWLEDGEMENT.

I wish to acknowledge my indebtedness to Capt. William Bradford for many of the facts of the foregoing article. Mr. Bradford served in the old navy of the United States, and is a graduate of the U. S. Naval Academy. He is a highly cultivated and most popular gentleman. He has been in command of one of the large river steamers for more than twenty years, and the facts given by him touching the river are most reliable; they were given in answer to questions asked by me.

JOHNSON NICKEUS,

UNITED STATES CONSULATE, *Consul.*

Barranquilla, June 12, 1892.

BUTTERINE IN MALTA.

REPORT BY CONSUL WORTHINGTON.

I am in receipt of a letter from a firm of manufacturers of American butterine, who say:

We are manufacturers of brand export butterine, a satisfactory substitute for pure butter. Our product possesses a decided advantage over natural butter for shipment to far-away points and for use in hot climates, in that it never becomes rancid. We pack it in 2-pound, 5-pound,

10-pound, and 25-pound tins, hermetically sealed, and are prepared to furnish any other style of package that may be desired. * * * If, when favoring us with a reply, you will say what you know as to quantities of butter, butterine, and oleomargerine now being used in your market, present sources of supply, styles of packages used, and quotations now ruling, we will be under many obligations. Being desirous of extending our business to your part of the world, we ask for the information desired.

In reply to the foregoing I would say that a fair trade is done here in butterine or margerin, principally imported from England. I can not state the actual quantities imported, no statistics being obtainable; but it is calculated that about 10,000 packages are imported annually. It is imported in tins of the sizes mentioned and wooden packages, say oval tubs of 14 pounds, and Irish casks of 60 pounds.

Butterine is principally consumed between the fall and spring. Last season's prices varied from $9.43 to $10.28 per 100 pounds.

In view of the remarks as to the advantages possessed by the butterine manufactured in the United States, their brand should become a favorite in this market and have a good share of the sales here.

It would be desirable for those wishing to engage in the trade to mail a small tin (by parcel post) as a sample and to have their prices, c. i. f. (cost, insurance, and freight) in Malta, for their various-sized packages. It would also be well to state whether one quality only is manufactured. The cheapest quality would have the largest sale here.

The firm of C. Breed Eynaud & Co., of Malta, would, I think, undertake the agency of such butterine.

JOHN WORTHINGTON,
Consul.

UNITED STATES CONSULATE,
Malta, July 20, 1892.

EGYPTIAN WEIGHTS AND MEASURES.

REPORT BY ACTING CONSUL-GENERAL GRANT, OF CAIRO.

I have the honor to inform you that on May 1, 1892, the metric decimal system of weights and measures came into force in all the Government administrations in Egypt.

The agrarian measures have not been altered, but will remain the same as heretofore until further order.

The tonnage of vessels will also be measured as heretofore.

The meter of the international commission is the standard by which the Egyptian weights and measures shall be reckoned.

I inclose herewith a translated copy of the weights and measures of Egypt, with their equivalents in the metric and the English systems.

LOUIS B. GRANT,
Acting Consul-General.

UNITED STATES AGENCY AND CONSULATE-GENERAL,
Cairo, May 5, 1892.

EGYPTIAN WEIGHTS AND MEASURES.

[Inclosure in Acting Consul-General Grant's report.]

Table showing equivalents.

MEASURES OF LENGTH.

Egyptian measure.	English measure.	Metric measure.
		Meters.
1 diraa baladi	22.835058 inches	0.58
1 diraa mimari	29.5281 inches	0.75
1 kassabah	139.766304 inches	3.55

MEASURES OF WEIGHT.

		Kilograms.
1 dirhem	1.760875 drams avoirdupois	0.00312
1 okieh (12 dirhems)	1.320656 ounces avoirdupois	0.03744
1 rotl (144 dirhems)	0.990492 pound avoirdupois	0.44928
1 oke (400 dirhems)	2.751367 pounds avoirdupois	1.248
1 cantar (200 rotolis)	99.049223 pounds avoirdupois	44.928
1 hamlah (60 okes)	165.082039 pounds avoirdupois	74.88
1 Alexandrian cantar (112 okes)	308.153139 pounds avoirdupois	139.776
1 heml (200 okes)	550.273463 pounds avoirdupois	249.6
1 metric ton	2,204.62124 pounds avoirdupois	1,000
1 English ton	2,240 pounds avoirdupois	1,016.04754

MEASURES OF WEIGHT FOR PRECIOUS SUBSTANCES.

		Grams.
1 mithkal (1⅓ dirhems or 24 kirats)	72.223392 grains troy	4.68
1 dirhem (16 kirats or 64 kamhas)	48.148928 grains troy	3.12
1 kirat (4 kamhas or one-sixteenth of a dirhem)	3.009308 grains troy	0.195
1 kamha (one-fourth of a kirat or one sixty-fourth of a dirhem).	0.752327 grain troy	0.04875

MEASURES OF CAPACITY.

		Liters.
1 ardeb	5.447392 bushels	198
1 wébah (one-sixth of an ardeb)	3.631595 pecks	33
1 kilah (one-twelfth of an ardeb)	3.631595 gallons	16.5
1 roub' (half a kilah)	1.815797 gallons	8.25
1 malwa (one-fourth of a kilah)	3.631595 quarts	4.125
1 kadah (one-eighth of a kilah)	1.815797 quarts	2.0625
1 nesf kadah (half a kadah)	1.815797 pints	1.03125
1 roubaah (one-fourth of a kadah)	3.631595 gills	0.515625
1 toumnah (one-eighth of a kadah)	1.815797 gills	0.2578125
1 karroubah (one-sixteenth of a kadah)	0.907898 gill	0.12890625
1 kirat (one thirty-second of a kadah)	0.453949 gill	0.064453125
1 daribah (8 ardebs)	43.579142 bushels	1,584
1 large fard (14 roub')	3.177645 bushels	115.5
1 small fard (7 roub')	1.588822 bushels	57.75

EQUIVALENTS OF METRIC AND EGYPTIAN WEIGHTS AND MEASURES.

Measures of length.

One millimeter is equal to 0.001724137931 diraa baladi.
One centimeter is equal to 0.01724137931 diraa baladi.
One decimeter is equal to 0.172413793103 diraa baladi.

One meter is equal to 1.724137931034 diraa baladis.
One decameter is equal to 2.81690140845 kassabahs.
One hectometer is equal to 28.169014084507 kassabahs.
One kilometer is equal to 281.69014084507 kassabahs.
One myriameter is equal to 2,816.90140845070̇4 kassabahs.

Measures of weight.

One milligram is equal to 0.0003205128205̇12 dirhem.
One centigram is equal to 0.003205128205̇128 dirhem.
One decigram is equal to 0.032051282051282 dirhem.
One gram is equal to 0.32051282051282 dirhem.
One decagram is equal to 3.205128205128205 dirhems.
One hectogram is equal to 32.051282051282051 dirhems.
One kilogram is equal to 320.512820512820512 dirhems.

Measures of weight for precious substances.

One gram is equal to 20.51282051282 kamhas.
One decigram is equal to 2.051282051282 kamhas.
One centigram is equal to 0.2051282051282 kamha.
One milligram is equal to 0.02051282051282 kamha.

Measures of capacity.

One liter or cubic decimeter is equal to 0.005050505 ardeb, or 1 roubaah, 1 toumnah, 1 karroubah, or 1.515151515 kirats.

One decaliter is equal to 0.05050505 ardeb, or 1 roub', 1 nesf kadah, 1 roubaah, 1 karroubah, or 1.151515151 kirats.

One hectoliter is equal to 0.505050505 ardeb, or 6 kilahs, 1 roubaah, 1 toumnah, 1 karroubah, or 1.515151515 kirats.

One kiloliter or cubic meter is equal to 5.05050505 ardebs, or 1 roub', 1 nesf kadah, 1 roubaah, 1 karroubah, or 1.151515151 kirats.

One deciliter is equal to 1.5515151515 kirats.
One centiliter is equal to 0.1551515151 kirat.
One milliliter is equal to 0.01551515151515 kirat.

DESIGNATION OF EGYPTIAN WEIGHTS AND MEASURES.

Measures of length.

Diraa baladi—measure of length divisible in 24 kirats.
Diraa mimari—measure of length containing 75 centimeters.
Kassabah—measure of length containing 3.55 meters.

Measures of capacity.

Ardeb—measure of capacity for dry substances.
Wébah—one-sixth of an ardeb.
Kilah—one-twelfth of an ardeb.
Roub'—one twenty-fourth of an ardeb.
Malwa—one forty-eighth of an ardeb.
Kadah—one ninety-sixth of an ardeb, divisible into 2 nesf kadahs, 4 roubaahs, 8 toumnahs, 16 karroubahs, or 32 kirats.

Measures of weight.

Dirhem—measure of weight divisible into 16 kirats or 64 kamhahs.
Okieh—measure of weight equal to 12 dirhems.

Rotl—measure of weight equal to 144 dirhems.
Oke—measure of weight equal to 400 dirhems.
Cantar—measure of weight equal to 100 rotolis or 36 okes.
Mithkal—measure of weight equal to 24 kirats or 1½ dirhems.
Kirat—measure of weight equal to 4 kamhas.
Kamha—measure of weight equal to one-fourth of a kirat or one ninety-sixth of a mithkal.

Land measures.

Square kassabah—land measure equal to the surface of a square containing 3.55 meters on each side.

Feddan masri—land measure equal to 333⅓ square kassabahs and divided into 24 kirats kamel, 72 habbahs, 144 daneks, 576 sahms, or 13.824 sohts.

EMIGRATION FROM ROTTERDAM TO THE UNITED STATES.

REPORT BY CONSUL GARDNER.

The direct emigration of the current calendar year from the port of Rotterdam to ports of the United States is of much greater volume than ever before known. Between January 1, 1892, and May 15, 1892, the steerage departures from this city to New York by steamers of the Netherlands-American Steam Navigation Company aggregated 15,742 persons. This record of only four and one-half months surpasses the average record of each entire calendar year for ten years prior to 1892.

THE RECORD OF TEN YEARS.

The emigrant departures from Rotterdam direct to the United States have been by calendar years as follows:

Years.	Number.	Years.	Number.
1882	11,516	1889	15,916
1883	8,368	1890	18,400
1884	5,741	1891	34,531
1885	4,398	Total	140,689
1886	9,698		
1887	16,211	Average each entire year	14,068
1888	15,910	Total for 4½ months in 1892	15,742

The ratio of previous years being maintained, will give a total exceeding 40,000 for the calendar year 1892.

THE INSPECTION OF EMIGRANTS.

In view of the increasing emigration from this city, I have satisfaction in reporting that the officers of the Netherlands-American Company, in whose hands the traffic is, are apparently conscientious in their efforts to comply fully with requirements of the United States laws relating to emigration. The doctors of their steamers are Americans, and are naturally predisposed to make their examinations of emigrants for the United States rigid. A remote suspicion of contagious disease is enough to prevent the

departure of the suspect, who is detained here in hospital at the company's expense until the fact of freedom from contagion is established.

In the case of all Russian peasants presenting themselves for passage the company requires, in addition to inspection by the ship's doctor, that special examination be conducted by a sworn resident police doctor. In an affidavit made before the consul of the United States and intended for delivery to the captain of the steamer, this doctor makes declaration that he has examined each emigrant named and described; that all are free from contagious disease; and that he has personally superintended the fumigation in Rotterdam of all their baggage and personal effects.

EXAMINATIONS BEFORE TICKETS ARE SOLD.

As regards the effort of the Netherlands-American Company to prevent the transportation to the United States of prohibited classes of emigrants other than those physically diseased, it may be reported that there has been prepared in different languages and supplied to the company's agents throughout Europe a printed digest of the United States laws governing emigration. Accompanying such digest is an instruction to each agent warning him that, in the event of refusal of the United States authorities to receive any passenger booked from his office, the total cost of returning such rejected passenger to Europe will be at his (the agent's) personal charge. An instruction similar to this has been recently issued to European agents, as I am informed, by a majority of the transatlantic lines engaged in the emigrant traffic.

In this connection, I take the liberty to add that, so far as my observation extends, the great steamship companies are rather allies than antagonists of the United States authorities in the effort to prevent prohibited emigration—and this from a purely business and selfish motive. It does not in the least pay them to risk the transportation to America of such emigrants as are liable to cause detention of their steamers in quarantine and liable also to be eventually sent back to Europe.

EMIGRANTS RETURNED TO ROTTERDAM.

Out of the 15,742 emigrant departures from this port to New York during four and one-half months to May 15, 1892, 55 were sent back for causes as follows: Pregnancy, 3; pauperism, 7; contract laborers, 27; diseased, 18; total, 55. This proportion is far greater than hitherto known, and argues increasingly rigid methods at the Barge Office in New York, of which the transportation companies are not slow to take cognizance.

ASSISTED EMIGRATION.

As indicating the extent to which emigration from this port is in any wise assisted, I report as follows: Of the 18,400 steerage passengers sailing during the calendar year 1890, 4,625 were provided with passage tickets which had been purchased in the United States. Of 34,531 sailing during 1891, 6,374 had tickets thus purchased. It is indicative of the unobjection-

able character of this class of emigrants from this port, however, that almost all persons provided with such tickets were Netherlanders, than whom there is no better emigrant class, and that the tickets had been purchased and sent to them by family friends already established and prosperous in the United States.

THE NATIONALITY OF EMIGRANTS.

Concluding, it is to be reported concerning the nationality of emigrants for the United States sailing from this port that the largest proportion is Austrian. Second in numerical strength are the Netherlanders; then come the Russians, Italians, and Germans in the order named.

WALTER E. GARDNER,
Consul.

UNITED STATES CONSULATE,
Rotterdam, June 10, 1892.

FACTORIES AND WORKSHOPS IN GREAT BRITAIN.

REPORT BY CONSUL BRUCE, OF LEITH.

The report of the chief inspector of factories and workshops for Great Britain for the year ended October 31, 1891, published yesterday, consists of 174 pages, viz, 34 pages of letter press from various inspectors in different parts of the United Kingdom; 5 pages of names, dates of appointments, salaries, etc., of inspectors of factories in Great Britain; 4 pages of the number of factories and workshops in each district; and 131 pages of returns of prosecutions for offenses against the factory and workshop act during the year ended October 31, 1891, such actions being chiefly for the illegal employment of young children, 435 cases out of 463 resulting in conviction. The information of principal value to workmen in the United States and their employers, owners of factories, workshops, etc., is found in reports from inspectors relating to (1) the tin-plate industry, (2) the cutlery industry, (3) boot-manufacturing, (4) cotton-manufacturing, and (5) the state of trade in Scotland and various parts of England.

Mr. Lewis, inspector for the Swansea district, referring to the tin-plate industry, says:

It is patent to the careful observer that the rush of material prosperity has for some time past been gradually easing up, * * * and that in some other industries sound business is becoming scarce. * * * Many works are still closed, current prices being, in the opinion of their owners, below prospective values, and until American stocks are further reduced there can be no prospect of progression.

Then comes the great question, "Will America make tin plates?". Many and various are the opinions expressed thereon, and it is gratifying to note that the majority of Welsh manufacturers have faith in the future of the trade, believing, as they do, that, should even the American demand gradually fall off, the annual loss may be equalized by opening up new markets in other parts of the world.

Then, again, there are not a few makers who have the temerity to think that the United States may again alter their economic policy, and that, under the generous influence of a largely reduced tariff, the Welsh tin-plate industry may shortly receive an immense impetus.

The fact that large business firms have recently removed from Swansea to the United States gives special significance to the word "temerity," implying that the "generous influence of a largely reduced tariff" was a thing rather hoped for than expected, as an "immense impetus" to the trade in Swansea would mean corresponding depression in the United States.

Welsh flannel and hosiery manufacturers have been kept well employed by the steady demand from the nontextile districts, for, although the price may be high, the Welsh workingman and his family are very partial to the wearing of native-made stuff (*gwlaneu gwlad*).

The relations between employer and employed have not at any time during the year been entirely free from friction, but the marshaling of forces and general call "to arms," at one time threatened, has happily been averted hitherto. Still, the year has been one of much controversy, and has been characterized by desultory skirmishing and guerrilla warfare. After all, in the midst of this spirit of conflict and of much "spoiling for a fight," there prevails a growing desire for peace, and intelligent men on both sides who appreciate the outlook are turning all their energies towards the formation, on an equitable basis, of boards of conciliation and sliding-scale associations.

Inspector-Captain Smith, of the Sheffield district, says:

Sheffield men are still recognized as the most skillful in the world; but, unfortunately for Sheffield, her workmen are to be found not only in Sheffield, but in many parts of the world. In the United States of America the rate of wages is sufficient to attract the cleverest workmen, who impart their knowledge to others. This fact and the operation of hostile tariffs are doing much damage to many branches of our "light" cutlery trades. On all sides I hear complaints. The occupier of an old, established firm told me that he had not received an order for months. I read in our local papers that since the day when the McKinley tariff came into operation two new cutlery manufactories have been started in the United States.

Mr. Johnston, inspector for the Bristol district, remarks:

The boot trade of Bristol and suburbs, together with the tanneries, may be considered the most important, and has shown more expansion of late years than any other.

The lighter description of goods is made in Bristol and heavy, hobnailed boots in the suburbs.

In both cases the work is carried on partly in factories and partly in workshops, for the uppers are cut out and sewn and the soles and heels cut by machinery in the factories.

Of the materials thus prepared, a part is made up into the finished articles in the factories and part is given out to workers to be done at their own homes.

A feature of this trade is the attendance of crowds of women and children at the factories in the earlier part of the week for the purpose of obtaining materials, which are delivered again at the end of the week in a finished state.

In these suburbs boys are employed in large numbers in workshops attached to the cottages to hammer in the hobnails into boot soles.

The workshops seldom afford proper cubic space, and a good deal of illegal work goes on.

The cottages are scattered over a wide extent, and the alarm is given when the inspector is known to be about, so that it would occupy one person's entire time during the autumn—the busy season—to keep a proper control over the work.

The chief inspector refers to the report of Inspector Osborne as "one of much value," with "details," however, "not clearly understood even by occupiers and operatives themselves." It relates to what is known as sizing,

whereby inferior goods can be placed cheaply in the market to compete with honest muslin. If difficult to understand scientifically, it is exceedingly plain to the wayfaring man after it has undergone the process of washing, whereby an apparently fine piece of muslin becomes a very coarse quality of cheese cloth. Mr. Osborne says:

As a result of the scarcity of American cotton during the war, there arose a demand for Surat cotton, its very short staple rendering the yarn spun from it rougher and more liable to break. Thus the use of special forms of size became essential to secure better weaving, and also to prevent the liability of the warp threads to "star" and break with the friction of the healds and reeds.

At the same time manufacturers, under the pressure of the merchants, had to solve the problem of producing cheap cloth with the maximum weight and the minimum of cotton. This originated a class of goods the demand for which by no means ceased when cotton again became plentiful.

In these circumstances "sizing" (some form of which has always been in vogue as far as we know; the natives of India use rice water) became a fine art, its aim being to fix in the warp threads the largest weight of china clay, etc., that could be carried through the weaving process. Owing to the clumsy methods in which these prescriptions were compounded, moisture became very important, and, in addition to the tallows and starchy matter used to give cohesion, the sensitive salts (chloride and sulphate of calcium and magnesium) were employed from their known affinity to moisture. In this way 250 per cent of weight can be added to 100 pounds of cotton warp on occasion.

Mr. Henderson, superintending inspector, reporting upon the state of the shipbuilding trade in Scotland and the north of England, says:

In my last year's report I referred to the gloomy outlook which it then presented. Freights fell seriously and thousands of tons of shipping were laid up. As the year advanced freights did not improve, but ships continued to be built, the low price of material, no doubt, being a temptation. In July, when the usual holidays occurred in the west of Scotland, the depression was about at its worst, and some of the largest shipbuilding yards on the Clyde had not a keel laid down. The employers' association then gave notice of a reduction of 5 per cent, but this was stoutly resisted by the "riveters," a class of men who usually make very high wages, although they can hardly be classed as skilled workmen. A strike was the result, which seriously disorganized the trade for a month or six weeks. The strike was repudiated by the men's own trade society, and ultimately, after a long controversy, they accepted the reduction and went back to work.

In speaking of textile interests, Mr. Henderson says:

The past has been one of the most trying years ever experienced in the cotton manufacturing districts. It is estimated that more money has been lost in Lancashire during the last twelve months than in any single year since the cotton industry was established. The quarter which ended on September 30 has been a particularly disastrous one to many cotton-spinning firms in Lancashire. The condition of affairs in Lancashire at the present time is regarded by some who have had long experience in the trade as very critical. For a long period there has been a growing tendency on the part of private capitalists to withdraw from the business. I referred to this last year in some remarks I made with respect to the Blackburn district, and they are applicable to a much wider area. It is distressing to witness the havoc which has been made in some of the picturesque valleys of Lancashire by the pressure of modern emulation and competition. Factories and cottages closed and untenanted, many of them unroofed and in ruins, meet the visitor at almost every turn, and they give some indication of the great sacrifice of capital which must have been made before the present hopeless condition was reached.

Inspector-Captain Bevan, of the Walsall district, reports:

No important new works or industries have been started in my district within the last twelve months. The iron mills have been only fairly employed, and at the time I write (October 10) a reduction of 2½ per cent has taken place in the ironworkers' wages, as decided by the conciliation board, such reduction being fixed by the present price of finished iron. The high price of coal and of the raw material has, it is said, brought this depression about. The hollow ware, nut and bolt, and galvanizing trades are depressed at present—in fact, unusually so.

Mr. Prior, inspector of the Huddersfield district, reports:

The past year has, in my district, been a season of industrial depression, and the outlook at present is not very promising. Several of our oldest and best-known manufacturing firms have been obliged to call their creditors together, and the enterprise of their neighbors is apparently checked by the wondering inquiry, "Whose turn will it be next to go down?"

It would be presumptuous on my part to pretend to fully account for this decline, but there are two important causes which can not be overlooked. One of these is the recent increase in the United States tariff, which has for a time paralyzed the American trade. The other is that during the last five or six years a complete revolution has taken place in the fancy woolen and worsted trade by the substitution of fast for slow looms.

The business outlook of Great Britain, as presented in the report, is certainly neither flattering nor hopeful.

WALLACE BRUCE,
Consul.

UNITED STATES CONSULATE,
Leith, July 22, 1892.

CORN CROP IN SOUTH AFRICA.

REPORT BY CONSULAR AGENT HOLLIS, OF DURBAN.

The principal staple of food for the 500,000 natives of Natal and Zululand is corn, or "mealies," as it is called here. This is white corn, not yellow. For some reason or other the natives are prejudiced against the latter and will not touch it, although in Zululand the natives raise yellow "mealies" closely resembling the American yellow corn.

When used as food the corn is ground into a coarse meal, and this is simply boiled with water in an iron pot, making ordinary porridge.

Corn is to the Kaffir and Zulu what rice is to the Indian coolie and the Chinaman. Any failure in the corn crop means a certain amount of distress among the native population, and also necessitates the importation of corn from other countries.

The corn crop last year was a good one, and there was a considerable surplus for export—about 150,000 bushels—but before this year's crop is available all of what remains of last year's crop will have disappeared.

In the coast districts and in Zululand the crop is about one-half of what it ought to be, and the shortage is estimated at about 200,000 bushels, but the accuracy of these figures can not be vouched for, as there are no official statistics from which figures can be obtained. Some dealers place the short-

age at less and some at more than the above figures, but I am of the opinion that the latter estimate is nearer the mark. From the upcountry districts reports come down of short crops in some places and full crops in others.

A few years ago, after a short crop, the dealers imported some corn from the River Plate, but this corn did not give any great satisfaction, and it is probable that when the time comes for importing corn this year the dealers will look to the American market for their supplies if business connections can be made with the American exporters in time for this trade, as American corn is much preferred to other corn.

In this warm climate corn is soon attacked by the weevil, and consequently the corn merchants only purchase small amounts from time to time, just sufficient to supply the immediate demand.

All corn is handled whole, and is not ground except when the meal is required for immediate consumption. In consequence of the smallness of this market a large quantity of corn placed upon it at any one time would break the market and would mean a heavy loss to all concerned in the transaction.

The importation of corn will probably begin in November, and will be by steamers of a tonnage of from 1,500 to 2,000 tons, or even smaller.

Should any exporters in the United States desire to make an effort to secure the probable trade in corn with this country, I would suggest that they address their communications to this office, and I will guaranty to distribute them, equally and without favor, among the several corn merchants of this port. I would also suggest that exporters, in writing to this office, give full particulars *in re* communication by cable, as it is a general practice here among the importers to place indents by cable, the A. B. C. code being the one principally used.

If these suggestions are carried out much valuable time will be saved.

W. STANLEY HOLLIS,
Consular Agent.

UNITED STATES CONSULAR AGENCY,
Durban, July 1, 1892.

CLIMATE OF HONDURAS.

REPORT BY CONSUL PETERSON, OF TEGUCIGALPA.

The North American contemplating a trip to Central America, and especially to Honduras, takes it for granted ordinarily that he is about to enter a pest-ridden, fever-laden, sun-parched section of the globe.

The fact is that nothing can be further from the truth. Central America, and especially Honduras, is favored with a comparatively temperate, and certainly with a healthful, climate. There are various gradations of climate, depending upon locality and elevation above sea level. The heat is greater on and near the coasts and in the lowlands, but even in these localities the heat of midday is compensated by the cool nights and delicious mornings.

Endemic fevers are comparatively of rare occurrence, and a proper attention to the laws of health will insure indemnity from the effects of change in climate.

There are few poisonous reptiles, and savage wild beasts are unknown. The only wild beast worth mentioning is the mountain lion, or a species of tiger, which never attacks man. On the coasts there are mosquitoes and sand flies, but no more of these than are found along the large rivers of the United States. The pest of the interior is the common flea.

The following article concerning the climate and temperature of the city of Tegucigalpa, the capital of the Republic of Honduras, gives a first-rate idea of the meteorological conditions of the interior of this Republic; and, moreover, it may be taken as a standard for those of the interior of all Central America. The article is taken from the Honduras Mining Journal, published in this city in English by Dr. R. Fitzgardner, a naturalist of well-known ability and the Government's geologist and assayist:

The city of Tegucigalpa is located about 3,200 feet above sea level, in north latitude 14° 15′ and west longitude 87° 10′, in a direct distance from the Pacific Ocean of about 70 miles. The valley of Tegucigalpa, if it may be called so, is one of the many topographical indentations found is Honduras between stratified and eruptive rocks. While the greater part of the city is built upon the stratified red marls of the Permian group, its immediate surroundings, abruptly rising towards the northeast, are built up of porphyry and trachyte, which extend in the plain towards Cerro de Hule, a mountain south of Tegucigalpa with an elevation of about 5,500 feet, with large basaltic dikes covering its surface. The soil in the immediate neighborhood of Tegucigalpa is, the greater portion, arid, and principally in the dry season, when the vegetation of the surrounding hills dies off, until the rains reappear.

The radiating power of the soil as regards light and heat, on account of the spare vegetation, is considerable, but largely counteracted by the morning and evening breezes that occur betwen 8 and 10 a. m. from the south and from 3 to 6 p. m. from the north.

The basin of Tegucigalpa contains two streams—the Rio Chiquito and the Rio Grande—which, during the month of January, have but a scanty supply of water, but which nevertheless refresh the surroundings. The temperature of the streams is about 70° F. at midday; in the morning, about 65°.

During the month of January, by the wise providence of nature, heavy night dews fall, which refresh the thirsty vegetation once more before entering into the hot season, which for the flora of the more or less arid tropics is the time of rest and of sleep, like the winter of the northern regions, with the only difference that cold is replaced by heat.

Without doubt the tropics of America present peculiar features in their meteorological conditions, which, by the same law of nature, have their effect upon their races, and it must not be a matter of wonder to encounter among them those peculiar contrasts which we see in their private and political life.

We reproduce a table representing the minimum and maximum temperature of Tegucigalpa during the month of January of the years 1888, 1889, 1890, and 1892. In perusing the table it will be noted that the lowest temperature during the month of January in four years reached down to 51° F., while the highest amounted to 83° F., making a difference of 32° F., while the average temperature amounts in the minimum to 60° and the maximum to 76°, making an average difference of 16° F. The hottest hours of the day are from 2 to 3 p. m., while the coldest usually occur between 2 and 3 a. m.

As a rule, strong northerly winds prevail, bringing with them some slight showers of rain, which usually occur in the evening or morning. The nights are clear and with the full moon

present a sight such as can only be seen in the highlands of the tropics, the clearness of the atmosphere allowing the intense light of the firmament to illuminate the surface of this section.

Another interesting feature observed is that principally in those bright nights of January and February the dynamite discharges of the Rosario mine, about 18 miles from this place, at an altitude of over 3,000 feet above that of Tegucigalpa, are distinctly heard, and with greater facility than in the immediate neighborhood of the mine.

Table showing the temperature of Tegucigalpa during January for four years.

Day.	Minimum.				Maximum.			
	1888.	1889.	1890.	1892.	1888.	1889.	1890.	1892.
	Deg.	*Deg.*	*Deg.*	*Deg.*	*Deg.*	*Deg.*	*Deg.*	*Deg.*
1	56	53	63	55	78	77	73	76
2	54	65	61	59	77	78	72	73
3	54	62	60	59	75	77	74	75
4	54	58	63	60	76	77	74	76
5	56	64	60	64	76	77	76	76
6	57	55	60	60	77	72	75	75
7	58	62	59	59	76	74	76	77
8	61	60	58	60	79	79	73	76
9	63	52	60	62	77	79	75	77
10	64	61	62	63	76	79	74	75
11	63	59	59	60	74	79	73	74
12	64	59	60	59	73	79	75	78
13	62	60	62	67	76	80	79	81
14	62	77	64	63	75	80	80	81
15	63	68	62	60	74	79	77	82
16	63	62	64	62	73	72	78	79
17	58	51	59	60	76	81	81	82
18	60	61	60	61	75	81	82	80
19	60	57	61	62	74	79	83	82
20	59	56	64	60	73	75	80	83
21	60	65	59	59	75	79	81	82
22	61	53	60	63	75	77	79	80
23	62	62	63	73	76	79	78	80
24	60	66	68	67	74	78	79	83
25	60	56	64	63	75	80	81	82
26	59	56	63	62	77	82	82	79
27	63	68	61	64	77	83	79	80
28	60	59	63	63	78	76	82	79
29	57	52	59	60	76	70	80	82
30	60	60	60	58	77	78	81	81
31	62	64	62	59	76	76	82	82

The hottest and dryest season of the year is from about March 1 to May 10; at the latter date the "rainy season" usually begins. During the rainy season, in the interior, it rarely rains a whole day. The rains usually come in the afternoon or at night and continue from thirty minutes to two hours, after which the sky becomes clear.

The fact is, for an ideal climate, the interior of Honduras presents all that could be desired.

JAMES J. PETERSON,
Consul.

UNITED STATES CONSULATE,
Tegucigalpa, June 9, 1892.

HUDDERSFIELD EXPORTS TO THE UNITED STATES.

REPORT BY COMMERCIAL AGENT SMYTH.

Table showing the value of declared exports from the commercial agency of Huddersfield to the United States during the year ended March 31, 1892.

Articles.	Quarter ended—				Total.
	June 30, 1891.	September 30, 1891.	December 31, 1891.	March 31, 1892.	
Bricks and clay	$7,636.87	$11,456.13	$7,646.58	$319.48	$27,059.06
Cards and card clothing	9,371.47	13,187.27	7,712.24	3,123.47	33,394.45
Calf and goat hair, etc	2,327.44	1,687.58	2,412.42	454.32	6,881.76
Chemicals and dyes	25,825.28	25,478.15	26,046.44	21,265.02	98,614.89
China and glass bottles	.....	.....	59.53	180.60	240.13
Clocks	.....	121.67	.....	.....	121.67
Collie dog	.....	.....	27.49	.....	27.49
Cutlery	.....	35.77	.....	.....	35.77
Corduroys and fustians	2,361.54	2,771.27	5,218.34	4,124.60	14,475.75
Cottons	5,273.86	3,660.16	4,294.15	4,055.57	17,283.74
Velvets and velveteens	.....	.....	1,928.94	3,382.12	5,311.06
Sewing	17,647.99	26,473.28	23,161.67	18,499.63	85,782.57
Grease and oil	.....	29,657.84	13,214.16	14,328.28	57,200.28
Hessian	.....	.....	.....	170.76	170.76
Iron ore	.....	.....	210.81	.....	210.81
Jute:					
Yarn	.....	12,102.94	2,629.16	2,657.35	17,389.45
Brussels	.....	.....	942.19	489.32	1,431.51
Leather	.....	286.96	451.28	423.56	1,161.80
Linens and linen yarn	865.81	826.49	1,219.75	3,047.60	5,959.65
Linens and cotton	1,806.09	5,338.29	4,559.37	2,794.55	14,498.30
Linens, cotton, and silk	.....	.....	.....	427.04	427.04
Mohair	.....	101.72	22.84	46.59	171.15
Mohair and cotton	14,532.37	19,694.98	1,018.43	.....	35,245.78
Mohair, silk, and cotton	.....	65.03	.....	.....	65.03
Mohair, worsted, and cotton	.....	150.78	.....	.....	150.78
Machinery	1,850.25	386.52	4,820.63	5,521.71	12,569.11
Needles	.....	.....	.....	93.35	93.35
Rugs and shawls	3,691.23	2,952.97	163.26	.....	6,807.46
Shoe cloths	.....	.....	97.47	46.89	144.36
Silk, satin, and silk yarn	13,802.79	7,280.35	9,123.75	10,022.19	40,229.08
Silk and cotton	21,687.74	10,973.37	582.13	.....	33,243.24
Stationery	240.55	340.63	117.84	368.46	1,067.48
Stuffs	6,321.91	6,585.57	206.55	3,519.12	16,633.15
Wire	.....	901.08	30.22	1,355.01	2,286.31
Wool	29,079.86	33,882.71	22,617.09	16,326.64	101,906.30
Woolen rags	.....	.....	.....	2,512.48	2,512.48
Woolens	157,399.69	145,555.18	104,964.92	84,503.52	492,423.31
Wool and cotton	5,646.02	1,710.23	286.22	972.50	8,614.97
Wool and silk	.....	.....	300.84	84.11	384.95
Worsteds	388,407.23	434,209.23	456,700.52	628,096.56	1,907,413.54
Worsted and silk	2,414.93	2,314.14	1,988.23	1,885.70	8,603.00
Worsted and cotton	266.25	1,974.07	475.17	1,231.06	3,946.55
Worsted, cotton, and silk	1,653.91	5,230.07	812.76	1,981.27	9,678.01
Worsteds and woolens	997.49	574.78	663.26	573.17	2,808.70
Wines and whiskies	.....	249.16	.....	62.77	311.93
Warp fasteners	.....	.....	222.23	.....	222.23
Total	721,108.57	808,216.37	706,938.88	838,946.37	3,075,210.19

The following table shows the decrease in the export trade for the year ended March 31, 1892:

Year ended March 31—	Total exports.	Worsteds.	Woolens.
1891	$4,003,514.81	$2,319,809.74	$533,223.08
1892	3,075,210.19	1,907,413.54	492,423.31
Decrease	928,304.62	412,396.20	40,799.77

WILLIAM P. SMYTH,
Commercial Agent.

UNITED STATES COMMERCIAL AGENCY,
Huddersfield, May 15, 1892.

AUSTRIAN POSTAL SAVINGS BANK.*

REPORT BY CONSUL-GENERAL GOLDSCHMIDT, OF VIENNA.

The eighth annual statement of the imperial royal postal savings bank bureau for 1891 has just been published. It shows that the beneficial working of that institution is steadily gaining ground, and that its purpose of stimulating the sense of economy among juveniles and the laboring classes is more and more appreciated by them. The statement reports as follows:

Both the transactions of the savings department and the check department have again considerably increased, and the success of both the departments in 1891 surpasses that of any former year. In the savings department the number of depositors has increased by 64,510, numbering 847,716 at the end of the year, with deposits of 24,841,994 florins in cash and state bonds to the nominal value of 9,638,680 florins, or an increase, as compared with the preceding year, of 3,395,828 florins in cash and of 1,241,790 florins in bonds. Besides, there were bought for depositors and forwarded to them during the course of the year bonds to the nominal value of 2,365,000 florins. The far greater part of the depositors are persons of limited means; hence the amount of each single deposit is in general made up of only small sums, while, on the other hand, the continued increase in cash and bonds deposited shows the growing tendency of economy among that class of population. The check department numbers 19,301 depositors, being an increase of 1,583 against last year. At the end of the year the deposits were 37,490,170 florins in cash and the nominal value of 2,854,270 florins in bonds, being an increase, as compared with 1890, of 3,479,396 florins in cash and the nominal value of 456,430 florins in bonds. Even more worthy of notice than the increase of the balance due is that of the money transactions of the check department. In 1891 these transactions have surpassed the amount of 2,000,000,000 florins, experiencing an increase of almost 14 per cent as compared with 1890. Of these money transactions

* The details of many of the tables in this report do not harmonize with the totals, but it was considered best to print as given by the consul-general.

more than 620,000,000 florins (31 per cent) were settled by way of the clearing *Verkehr*, without the requirement of any cash transactions.

The financial result of 1891 corresponds with the increase of business transactions, yielding the net amount of 1,030,505 florins, against 865,058 florins in 1890.

SAVINGS DEPARTMENT.

The number of depositors in 1891 was 847,716; in 1890, 783,206; increase, 64,510.

The following statement shows the amount of transactions in 1891:

	Florins.
Deposits, inclusive of interest added to capital stock	23,315,393.92
Payments	19,919,565.06
Total of transactions	43,234,958.98
Amount of deposits at the close of 1891	24,841,994.63
Increase of deposits in 1891	3,395,828.86

The number of new depositors was as follows:

1891	144,947
1890	140,112
In the preceding years	1,167,517
Total	1,452,576

The following figures show the number of accounts liquidated:

1891	80,437
1890	76,337
In the preceding years	448,086
Total	604,860

Table showing the number of accounts newly entered and liquidated in 1891 according to the different crown lands.

Crown land.	Newly entered.	Liquidated.
Lower Austria	48,474	25,062
Upper Austria	5,047	2,908
Salzburg	1,636	910
Tyrol and Vorarlberg	6,361	4,100
Styria	7,091	4,217
Carinthia	2,480	1,317
Carniola	1,458	1,083
The coast lands (Istria, Görtz and Gradisca, and Trieste)	4,619	2,459
Dalmatia	1,204	637
Bohemia	29,663	17,195
Moravia	12,770	7,223
Silesia	3,826	2,164
Galicia	17,580	9,693
Bukowina	2,738	1,469
Total	144,947	80,437
Preceding years	1,307,629	524,423
Grand total	1,452,576	604,860

Table showing the number of accounts newly entered and liquidated in 1891 according to the different months of the year.

Month.	Newly entered.	Liquidated.	Increase.
January	19,008	6,749	12,259
February	14,306	6,442	7,864
March	12,028	8,114	3,914
April	12,159	7,522	4,637
May	10,530	7,700	2,830
June	11,470	6,555	4,915
July	11,833	6,292	5,541
August	11,058	6,209	4,849
September	10,265	6,021	4,244
October	10,746	6,046	4,700
November	10,519	6,059	4,460
December	10,025	6,728	4,297
Total	144,947	80,437	64,510

As in 1890, so the month of January in 1891 shows the highest number of depositors (19,008), while March shows the largest number (8,114) and September the smallest number (6,021) of liquidations. The increase of new depositors is the largest since 1884; and the percentage of liquidations in 1891 was 8.66 per cent, against 8.88 per cent in 1890.

Table showing the number of depositors in 1891 and 1890 according to crown lands.

Crown land.	1891.	1890.	Increase.
			Per cent.
Lower Austria	268,895	245,483	9.5
Upper Austria	29,279	27,140	7.8
Salzburg	8,893	8,167	8.9
Tyrol and Vorarlberg	33,624	31,363	7.2
Styria	39,768	36,894	7.8
Carinthia	12,560	11,397	10.2
Carniola	9,102	8,727	4.3
The coast lands (Istria, Göritz and Gradisca, and Trieste)	23,043	20,882	10.3
Dalmatia	6,093	5,532	10.2
Bohemia	203,946	191,473	6.4
Moravia	88,821	83,274	6.6
Silesia	24,933	23,271	7.1
Gallicia	84,954	77,067	7.2
Bukowina	13,805	12,536	10.1
Total	847,716	783,206	8.2

Of every 1,000 inhabitants of the total population of Austria there were 36 depositors in 1891, against 34 in 1890.

Table showing the number of depositors to each 1,000 inhabitants of the total population in the different crown lands.

Crown land.	1891.	1890.
Lower Austria	101	96
Upper Austria	37	35
Salzburg	51	48
Tyrol and Vorarlberg	36	34
Styria	31	29
Carinthia	34	31
Carniola	18	18
The coast lands (Istria, Göritz and Gradisca, and Trieste)	33	30
Dalmatia	11	11
Bohemia	35	33
Moravia	39	37
Silesia	41	39
Galicia	13	12
Bukowina	21	20

Lower and Upper Austria, Salzburg, Moravia, and Silesia show a larger number of depositors than the other crown lands, while Dalmatia has the lowest average number of depositors.

Table showing the number of depositors according to age, sex, and ability to write.

Classification.	1891.		Preceding years.	
	New depositors.	Liquidations.	New depositors.	Liquidations.
Age.				
Up to 10 years	25,570	6,347	235,711	40,627
10 to 20 years	40,465	33,628	474,758	203,669
20 to 30 years	35,693	16,556	291,704	118,432
30 to 40 years	29,564	11,779	169,874	83,803
40 to 50 years	7,788	6,848	72,247	43,597
50 to 60 years	2,042	2,441	26,901	14,193
60 to 70 years	1,204	780	11,510	4,424
70 to 80 years	521	541	4,143	1,789
80 to 90 years	135	152	806	647
Over 90 years	13	11	48	32
Age unknown	83	77	1,227	348
Corporations, etc.	1,869	1,277	19,700	12,922
Total	144,947	80,437	1,307,629	524,423
Sex.				
Males	90,343	52,130	843,925	362,785
Females	52,735	27,030	444,004	148,716
Corporations, etc.	1,869	1,277	19,700	12,922
Total	144,947	80,437	1,307,629	524,423
Ability to write.				
Able to write	124,127	70,756	1,138,446	482,191
Not able to write	1,779	1,027	127,352	21,186
Unknown	17,172	7,377	22,231	8,124
Corporations, etc.	1,869	1,277	19,700	12,922
Total	144,947	80,437	1,307,629	524,423

Table showing the number of depositors according to age, sex, and ability to write—Cont'd.

Classification.	Total.			Percentage of depositors on December 31, 1891.
	New depositors.	Liquidations.	Remaining.	
Age.				*Per cent.*
Up to 10 years	261,281	46,974	214,307	25.281
10 to 20 years	515,223	237,297	277,926	32.785
20 to 30 years	327,397	134,988	192,409	22.697
30 to 40 years	199,438	95,582	103,856	12.251
40 to 50 years	79,035	50,445	28,590	3.373
50 to 60 years	28,943	16,634	12,309	1.452
60 to 70 years	12,714	5,204	7,510	0.886
70 to 80 years	4,664	2,270	2,394	0.282
80 to 90 years	941	799	142	0.017
Over 90 years	61	43	18	0.002
Age unknown	1,310	425	885	0.104
Corporations, etc.	21,569	14,199	7,370	0.87
Total	1,452,576	604,860	847,716	100
Sex.				
Males	934,268	414,915	519,353	61.265
Females	496,739	145,746	320,393	37.865
Corporations, etc.	21,596	14,199	7,370	0.87
Total	1,452,576	604,860	847,716	100
Ability to write.				
Able to write	1,262,573	552,947	709,626	83.71
Not able to write	129,131	22,213	106,918	12.612
Unknown	39,309	15,501	23,808	2.808
Corporations, etc.	21,569	14,199	7,370	0.87
Total	1,452,576	604,860	847,716	100

Table showing the number of depositors according to occupation.

Classification.	1891.		Preceding years.	
	New depositors.	Liquidations.	New depositors.	Liquidations.
Children	11,847	4,344	120,575	21,657
Students and school children	35,451	22,286	445,940	168,691
Private persons	14,684	10,948	95,405	43,649
Public officials	1,616	1,206	23,249	10,212
Other officials	3,488	2,551	40,207	17,708
Clergymen	596	361	7,213	2,983
Members of the army	3,652	2,113	28,737	12,539
Members of the police and customs	1,405	396	9,287	2,403
Scholars, teachers, and artists	3,135	1,428	26,817	10,852
Attorneys	345	175	3,769	2,927
Surgeons and apothecaries	570	332	5,758	4,690
Authors	70	98	2,541	1,914
Merchants	1,385	1,221	25,356	11,320
Manufacturers	373	222	7,884	5,574
Craftsmen	27,250	13,660	177,631	76,159
Merchants' clerks	4,646	2,219	36,007	19,512
Workmen in factories	2,450	1,269	22,289	12,522
Workwomen	3,858	1,198	20,684	8,736
Servants	14,912	6,525	97,549	35,089
Farmers	2,566	1,641	15,041	8,699

Table showing the number of depositors according to occupation—Continued.

Classification.	1891.		Preceding years.	
	New depositors.	Liquidations.	New depositors.	Liquidations.
Farmers' workmen	134	286	4,406	2,960
Day-laborers	1,751	864	8,029	4,146
Miners and foresters	661	235	5,535	1,974
Mariners	125	59	643	293
Corporations, etc	1,769	1,277	19,700	12,922
Occupation unknown	74	356	2,584	474
Convicts	11	15	82	57
Total	144,947	80,437	1,307,269	524,423

Classification.	Total.			Percentage of depositors on December 31, 1891.
	New depositors.	Liquidations.	Remaining.	
				Per cent.
Children	132,422	26,001	106,421	12.553
Students and school children	481,391	190,977	290,414	34.258
Private persons	110,089	54,597	55,492	3.545
Public officials	24,865	11,418	13,447	1.586
Other officials	43,695	20,259	23,436	2.764
Clergymen	7,809	3,284	4,525	0.533
Members of the army	32,389	14,652	17,737	2.092
Members of the police and customs	10,692	2,799	7,893	0.93
Scholars, teachers, and artists	29,952	12,280	17,672	2.084
Attorneys	4,114	3,102	1,012	0.119
Surgeons and apothecaries	6,328	5,022	1,306	0.154
Authors	2,611	2,012	599	0.07
Merchants	26,741	12,541	14,200	1.675
Manufacturers	8,257	5,796	2,461	0.29
Craftsmen	204,881	89,819	115,062	13.573
Merchants' clerks	40,653	21,731	18,922	2.232
Workmen in factories	24,739	13,791	10,948	1.291
Workwomen	24,542	9,934	14,608	1.723
Servants	112,461	41,614	70,847	8.357
Farmers	17,607	10,340	7,267	0.857
Farmers' workmen	4,540	3,246	1,294	0.152
Day-laborers	9,780	5,010	4,770	0.562
Miners and foresters	6,196	2,209	3,987	0.47
Mariners	768	352	416	0.049
Corporations, etc	21,469	14,199	7,270	0.87
Occupation unknown	2,658	830	1,828	0.215
Convicts	93	72	21	0.002
Total	1,452,576	604,860	847,716	100

In the above table the gratifying fact is shown that in 1891, as in the years preceding, people of limited means take a live interest in, and avail themselves largely of, the opportunity offered to them of laying by their small earnings with great facility and perfect safety. The beneficial influence of this institution in awakening and strengthening the sense of economy among that class of population which has but a very moderate income (a circumstance of high political importance) is made evident by the fact

that in 1891 no less than 20,668, that is, more than 32 per cent of the total of new depositors in 1891, were children and students. Craftsmen, laborers, and tradespeople, too, to a great extent deposit their savings in the postal savings bank; and the number of servants who are thus laying by their pennies is increasing from year to year. Clubs, political bodies, corporations, and charitable institutions are depositors at the postal savings bank to the number of 6,771, against 6,124 in 1890.

Table showing the number of transactions.

Year.	Deposits.	Payments.
1891	1,351,643	469,290
1890	1,277,805	428,909
1889	1,224,310	388,145
1883–'88	1,818,952	1,790,512
Total	5,672,710	3,076,856

The amount of money deposited, inclusive of interest added to the capital stock, was:

	Florins.
1891	23,315,393.15
1890	21,597,857.09
1883–'89	98,518,278.43
Total	143,431,528.67

The year 1891 shows the highest amount of money deposited during any one year since the instituting of the postal savings bank.

Table showing the amount of transactions.

Year.	Deposits.			Payments.
	Amount.	Interest.	Total.	
	Florins.	*Florins.*	*Florins.*	*Florins.*
1891	22,720,376	595,018	23,315,394	19,919,565
1890	21,048,027	549,830	21,597,857	18,197,149
1889	18,195,056	460,119	18,655,175	15,715,911
1883–'88	78,446,960	1,416,133	79,863,103	64,756,908

The following table shows the number of first deposits and number of additional deposits in 1890 and 1891:

Year.	First deposits.		Additional deposits.	
	Number.	Per cent.	Number.	Per cent.
1891	144,947	10.7	1,206,696	89.3
1890	140,112	10.9	1,137,693	89.1

The average value of each deposit in 1891 was 16.81 florins; in 1890, 16.47 florins.

The number and amounts of the different deposits and payments in 1891 were as follows:

Description.	Number of deposits.	Number of payments.
50 kreutzers or less	247,581	7,350
50 kreutzers to 1 florin	225,105	27,469
1 to 5 florins	425,706	113,421
5 to 10 florins	160,995	82,683
10 to 20 florins	108,328	100,847
20 to 50 florins	94,324	54,668
50 to 100 florins	46,781	37,396
100 to 200 florins	22,229	23,300
200 to 300 florins	8,963	10,658
300 to 500 florins	6,469	6,881
500 to 1,000 florins	5,700	4,860

The following statement shows the details of the deposits:

	Florins.
Total amount of savings deposited in 1891	22,720,376.09
Total amount of deposits withdrawn in 1891	19,919,565.06
Balance	2,800,811.03
Interest added to capital stock	595,017.83
Total savings in 1891	3,395,828.86
Total deposits, inclusive of interest added to the capital stock, on December 31, 1890	21,446,165.77
Savings of 847,716 depositors on December 31, 1891	24,841,994.63

The average value of each deposit on December 31 for the past nine years was as follows:

Year.	Value.	Year.	Value.
	Florins.		*Florins.*
1891	29.30	1886	19.27
1890	27.16	1885	17.80
1889	24.89	1884	14.50
1888	22.88	1883	11.34
1887	21.27		

On December 31, 1891, the depositors had their savings deposited as follows:

Description.	Number.	Amount.
		Florins.
1 florin or less	243,711	189,967
1 to 3 florins	119,932	241,865
3 to 5 florins	47,755	191,322
5 to 10 florins	64,968	457,736
10 to 50 florins	135,096	3,552,981
50 to 100 florins	41,253	2,953,675
100 to 200 florins	28,284	3,857,263
200 to 300 florins	20,114	6,227,519
300 to 1,000 florins	8,109	5,657,045

The percentage of depositors was as follows:

Year.	Up to 5 florins.	5 to 100 florins.	More than 100 florins.
	Per cent.	*Per cent.*	*Per cent.*
1891	57.89	34.12	7.99
1890	57.18	35.24	7.58
1889	58.04	35.17	6.79
1888	59.6	34.5	5.9
1887	61	33.9	5.1
1886	60.7	34.6	4.7
1885	62	32.5	5.5

CHECK DEPARTMENT.

The number of depositors in the check department on December 31, 1891, was 19,391, which is an increase of 1,583.

The following statement shows the amount of transactions in 1891:

	Florins.
Deposits, inclusive of interest added to capital stock, in 1891	1,001,855,540.31
Deposits withdrawn in 1891	998,376,144.28
Total	2,000,231,684.59
Transactions in 1890	1,759,141,028.43

The number of new depositors was as follows:

1891	2,550
1890	2,694
Preceding years	19,848
Total	25,092

Of the 19,391 persons and business firms having check accounts at the postal savings banks on December 31, 1891, 19,173 were domiciled in Austria and 218 in Hungary and foreign countries, as is shown by the following table:

Country.	1891.	1890.
Austria	19,173	17,665
Hungary	139	80
Bosnia and Herzegovina	5	4
United States	1	1
Germany	61	44
England	2	2
France	1	1
Greece	1	1
Italy	1	2
Russia		1
Switzerland	6	6
Servia	1	1
Total	19,391	17,808

The depositors were distributed in 2,041 places (against 1,921 places on December 31, 1890), of which 1,947 places are located in Austria and 94 places in Hungary and foreign countries. The number of depositors in one

and the same place is steadily increasing. The number of places in which there are at least 10 depositors has increased from 227 to 240 during 1891. On comparing the number of depositors in 1891 with that of 1890, Vienna shows an increase of 405, or 8 per cent; Prague, 130, or 9 per cent; Gratz, 38, or 15 per cent; Lintz, 21, or 10 per cent; and Trieste, 29, or 16 per cent.

The transactions, *i. e.*, moneys deposited, moneys paid out, and adding of interest to capital stock, were as follows:

Year.	Number.	Amount.
		Florins.
1891	8,691,259	2,000,231,684.59
1890	7,668,498	1,750,141,088.43
Preceding years	22,784,586	5,566,680,107.82
Total	39,144,343	9,326,052,820.84

In 1891 the transactions in Vienna represented the sum of 545,484,947 florins; Prague, 83,170,407 florins; Brunn, 30,002,918 florins; Trieste, 21,574,647 florins; Gratz, 20,481,443 florins; Lintz, 11,264,525 florins; Reichenberg, 10,517,575 florins; Pilsen, 10,422,449 florins.

The average number of daily transactions in 1891 was 23,812, and in 1890, 21,009.

The average number and value of transactions with each depositor were as follows:

Year.	Number.	Value.
		Florins.
1891	427	98,252
1890	409	93,870

The number and amount of deposits were:

Year.	Number.	Amount.
		Florins.
1891	6,902,740	1,001,448,400.31
1890	6,067,481	880,363,809.01

Hence the number of deposits in 1891 increased by 835,259, representing an increase of 121,084,591.30 florins as compared with the preceding year.

The average value of the deposits in 1891 was 145.08 florins, against 145.09 florins in 1890.

The average total number of deposits in favor of each depositor in 1891 was 339, representing 49,191.89 florins, against 323, representing 46,977.64 florins, in 1890.

In 1891 there were made 5,617,639 deposits (81.3 per cent, against 80.8 per cent in 1890) in sums up to 150 florins, 1,126,725 deposits (16.3 per

cent, against 17 per cent in 1890) in sums up to 1,000 florins, and 160,579 deposits (2.4 per cent, against 2.2 per cent in 1890) in sums over 1,000 florins.

The following statement shows the details of the deposits:

	Florins.
Deposits in 1891	1,001,448,400.31
Withdrawals in 1891	998,376,144.28
Balance	3,072,256.03
Interest added to capital stock on December 31, 1891	407,140.00
Total balance	3,479,396.03
Balance on December 31, 1890	34,010,774.57
Total balance December 31, 1891	37,490,170.60
Average due to each depositor December 31, 1891	1,933.38
Average due to each depositor December 31, 1890	1,970.65

The number of depositors and the value of deposits on December 31, 1891, according to the sums deposited, were as follows:

Description.	Depositors.		Value of deposits.	
	Number.	Per cent.	Amount.	Per cent.
			Florins.	
100 to 150 florins	4,905	25.38	637,308	1.93
150 to 300 florins	3,489	18.05	951,165	2.88
300 to 500 florins	2,328	12.05	1,016,010	3.07
500 to 1,000 florins	2,826	14.64	2,714,826	8.21
1,000 to 2,000 florins	2,304	12.43	3,378,781	10.22
2,000 to 3,000 florins	1,048	5.42	2,553,946	7.72
3,000 to 4,000 florins	556	2.88	1,901,595	5.75
4,000 to 5,000 florins	390	2.02	1,728,068	5.22
5,000 to 10,000 florins	795	4.11	4,446,674	13.44
10,000 to 20,000 florins	394	2.04	5,395,436	16.31
20,000 to 30,000 florins	95	0.49	2,296,959	6.94
30,000 to 40,000 florins	40	0.21	1,367,037	4.13
40,000 to 50,000 florins	12	0.06	562,019	1.7
50,000 florins and over	43	0.22	4,126,614	12.48

Of the total of deposits 55.48 per cent (against 55.05 per cent in 1890) is of a smaller amount than 500 florins, 27.07 per cent (against 27.11 per cent in 1890) of from 500 to 2,000 florins, and 17.45 per cent (against 17.84 per cent in 1890) of more than 2,000 florins. Till December 31, 1891, there were 74,350 blank check forms delivered to depositors. For each form the legal tax of 2 kreutzers was paid to the Government, making the total sum of 172,201.62 florins, of which 35,052.80 florins were paid in 1891.

CLEARING DEPARTMENT.

This branch, too, shows an increase of 1,154 members, numbering on December 31, 1891, 13,354 members, making 69 per cent of the total number of depositors in the check department. On December 31, 1891, 13,189 (against 12,105 in 1890) members were residing in Austria, 110 (against 58 in 1890) in Hungary, and 55 (against 37 in 1890) in foreign countries.

The following table shows the number and amount of transactions:

Year.	Number.	Amount.
		Florins.
1891	1,320,682	620,283,848.68
1890	1,184,560	528,524,592.82
Preceding years	3,485,818	1,378,173,933.32
Total	5,991,060	2,526,982,374.82

The number and amount of items of booking to the credit or debit of the members were as follows:

Year.	Number.	Amount.
		Florins.
1891	660,341	310,141,924.34
1890	592,280	264,262,296.41
1889	507,495	216,683,155.51
1884-'88	1,235,414	472,403,811.15

The average value of each item booked to the credit or debit of the members of the clearing department was 469.67 florins in 1891, against 446.18 florins in 1890. The average number of items thus booked for each member was 48 in 1891, against 47 in 1890. The average amount booked to the credit or debit of each member was 22,500.14 florins in 1891, against 20,948.26 florins in 1890.

MISCELLANEOUS.

There were 2,357,339 receipts sent by letter mail to the postal savings bank in 1891, against 2,189,721 in 1890. There were 6,005,341 receipts forwarded by the postal savings bank in 1891, against 5,436,941 in 1890.

One hundred and seventeen new post-offices were opened in 1891 which were entrusted with the postal savings bank business. Seven post-offices were closed.

On December 31, 1891, there were 4,767 post-offices (against 4,657 in 1890) connected with the postal savings bank, making an average of 1 postal savings bank office for every 62.9 square kilometers or 5,000 inhabitants.

In 1891 the total income and expenses of the postal savings bank were as follows:

	Florins.
Income	1,914,900.40
Expenses	884,394.42
Net profit	1,030,505.98
Profit in 1890	856,058.47
Increase	174,447.51

For taxes, etc., the fiscal received 41,806.24 florins in 1891, against 37,440.52 florins in 1890.

Twenty per cent of the profit is to be added to the pension funds, the balance to the reserve funds of the postal savings bank and check department.

JULIUS GOLDSCHMIDT,
Consul-General.

UNITED STATES CONSULATE-GENERAL,
Vienna, May 28, 1892.

THE ORANGE FREE STATE.

REPORT BY CONSULAR AGENT LANDGRAF, OF BLOEMFONTEIN.

AGRICULTURE.

Since this country is specially adapted for agriculture, the soil being particularly fertile, great progress has been made for the last few years in this branch of industry. Proofs of this have been given in almost every district of the Orange Free State by the yearly successful and well-supplied "shows" held in the towns and villages of the different districts. The Government of the Orange Free State has greatly encouraged agriculture and voted money liberally for the support of these agricultural exhibitions.

During the last year, however, agriculture has been little less than a failure, owing to the many swarms of locusts that have overrun the country, not only devouring the crops of cultivated lands, but also attacking fruit-bearing trees. Nothing has yet been done to exterminate these insects; neither are there any means known of getting rid of them. On this account, grain will not only become very high in price, but will have to be imported to meet the demand.

The market price for wheat meal up to date is $8 per 200 pounds; maize, $4.50 to $6 per muid of 2.838 bushels; millet, from $4 to $5 per muid; chaff, from $1.12 to $2 per bale; oat hay, from $1.50 to $2 per 100 pounds; and potatoes, from $2.50 to $3 per 100 pounds.

COMMERCE.

On account of the increasing population through immigration, partly attracted by the discovery of minerals and partly on account of the salubrious climate (particularly suitable for consumptive invalids), the demand for foreign goods has been greater than any other year. Since this Republic does not own any manufactories, every manufactured article of whatever kind must be imported. Most of the trade up to the present is in the hands of the English and German nations, yet more than 50 per cent of the imported rough goods bears the American trade-mark.

It is on no account presumption to state that, if merchants of this country were enabled to import direct from the United States, most of the trade would then come into our hands. The circuitous route via England, as well as the double tax (of transshipment and commission charges in England and customs duty at the South African harbors), forms the only obstacle. Direct steamship communication would not only remove this obstacle, but would also effect a reduction in the prices of imported goods.

The following is a price-list of certain American articles as sold here:

Agricultural implements.—Plows, double furrow, from $42 to $52 each; plows, treble furrow or more, from $50 to $65; common plows, No. 75, with three shares, $10 each; churns (small ones), from $5 to $7 each; and harrows, from $12 to $24 each.

Household furniture.—Wardrobes, from $20 to $60; chest of drawers, from $17 to $25 (with or without mirrors); 4 to 8 feet tables (common), from $6 to $17; organs, from $85 to $225.

Building material.—Corrugated iron, from 18 cents to 20 cents per foot; wood, from 8 cents to 16 cents per foot.

Groceries.—Rice, from 8 to 10 cents per pound; sugar, from 8 to 16 cents per pound; candles, from 20 to 24 cents per pound; and paraffin, from $6 to $8 per case, or 12 gallons.

The total imports of the Orange Free State amount yearly to $10,000,000.

The total exports, which consist chiefly of wool, mohair, ostrich feathers, hides, horns, gold, and diamonds, amount yearly to $10,050,000.

COMMUNICATION.

The first line of railroad has now been completed in the Orange Free State at a cost of $13,140,900. It connects Cape Colony in the south and the Transvaal (South African Republic) in the north by direct communication, covering a distance of 334½ miles within the Orange Free State between both the extreme points.

Another line running from the colony of Natal to Harrismith, a town situated in the northeast of the Orange Free State, was opened on July 13, 1892.

All other communication is by means of coaches, carts, etc. To places where there is no railroad goods are transported by bullock wagons. The rate of freight by rail (according to the class of goods) is from 4 to 11 cents per ton per mile; by bullock wagon, from 8 to 12 cents per ton per mile.

Telegraphic communication exists all over the state.

FINANCE.

The revenue of the Orange Free State amounts yearly to about $1,500,000, and the expenditure to about $1,250,000. Banks are established in nearly every town.

LABOR.

All heavy labor is mostly performed by Kaffirs, who receive from 48 to 80 cents per diem. Their working hours are from 6 a. m. to 6 p. m. in summer and from 7 a. m. to 5 p. m. in winter. The Kaffirs subsist principally on Indian corn.

Tradesmen earn from $4 to $6 per diem. It may be remarked that all handicraft is in the hands of white people.

MINING.

Diamonds.—Several new mines have lately been opened, and are found to contain diamonds of good quality. It is universally known that diamond mines exist all over the southern part of the Orange Free State, but are not prospected for, due either to the absence of capitalists or speculators. The Dutch population of this country (and the largest landowners) lack the enterprising energy for discoveries. At present the attention of foreign capitalists is mostly drawn to the interior of Africa, namely, Mashonaland, and unless mines are discovered by chance they will not be prospected for. The output of Jagersfontein (the first diamond mine discovered in this state) for the month of June was 15,576½ carats, valued at $120,000.

Coal.—A rich vein of coal was recently discovered near Vereeniging, a village on the border near the Vaal River. This vein has been found to be 290 feet deep. Several coal mines have been opened during the last six months. Coal is sold here at $15 per ton.

Gold.—Reef gold has been found near Lindegesfontein, a village in the northern part of the Orange Free State, but, owing to the want of capital, the mine has been more or less abandoned.

PUBLIC WORKS.

Several imposing buildings have been erected, of which may be mentioned the Parliament house, at a cost of $200,000; post-office, $60,000; several schools, $100,000; and bridges, $150,000.

TECHNICAL AND INDUSTRIAL EDUCATION.

The Orange Free State Government has been petitioned to erect a technical and industrial educational institution, but it has been decided by the Volksraad (congress) to postpone the matter.

E. R. LANDGRAF,
Consular Agent.

UNITED STATES CONSULAR AGENCY,
Bloemfontein, July 22, 1892.

COAL IN SONORA.

REPORT BY CONSUL SMITH, OF NOGALES.

The coal fields commence near San Marcial, about 75 miles northeast of Guaymas, extending east 90 miles or so to Trinidad.

From Ortiz station, on the railroad, to the commencement of the coal belt the distance is probably about 40 miles, but the proper outlet for this coal would be a road direct from Guaymas.

In an investigation and report upon coal in Sonora, made by me in October, 1890, I found that between the parallels 32° and 34° coal is found at the above-named place; again near Fronteras, Sonora; again in the Chiri-

cahua Mountains, in Arizona, about 40 miles east of Willcox, on the Southern Pacific Railroad; again northwest from Willcox about 70 miles, on the San Carlos Indian reservation; again further north, near Fort Apache; again further north, at Evanston, Wyo.; and again further north, in the State of Montana. From this it would seem there is a coal belt extending north from San Marcial, Sonora, between these two parallels, thousands of miles. The Sonora coal fields have been prospected some with the diamond drill, but no mines have been opened up.

On account of their close proximity to the navigable waters of the Pacific, they are valuable, and with proper management they could be made to pay handsomely.

DELOS H. SMITH,
Consul.

UNITED STATES CONSULATE,
Nogales, June 13, 1892.

TREES IN FRENCH CITIES.

REPORT BY CONSUL KNOWLES, OF BORDEAUX.

One of the chief beauties of the larger French cities and second only to their magnificent edifices and monuments are the trees.

The almost interminable vistas of chestnuts and acacias stretching along the broad and superbly paved avenues as far as the eye can reach, their bending branches almost touching one another in one endless arch of verdure, form not only a delightful perspective for the eye of resident and visitor alike, but serve to add beauty to cities already beautiful and grace and symmetry to whatever might be harsh and forbidding.

It must not be presumed, however, that the existence of this veritable *rus in urbe* is the result of nature's handiwork alone, for science and art have each in turn lent their aid in converting these great centers into tremendous forest gardens.

In short, the planting as well as the maintenance of the trees in French cities is an item of no little import in the annual budget prepared by the municipal council. Nor does this body look upon their preservation as a matter of less consequence than the repairing of its roadways or the lighting of its streets.

The climate and soil of France are not suited to the nurture and growth of every sort of tree, so that those chosen to line the avenues and boulevards of her cities must be selected with no little judgment.

Chestnuts thrive wondrously. They grow well on a not too rich or generous soil, but require at the same time frequent watering at the roots. The elm is also a favorite tree with the professional landscape gardeners, though they are, unfortunately, extremely susceptible to the destructive work of worms and insects. Maples grow slowly, but they are hardy and

strong in the end. Add to these the acacia, the linden, the sycamore, the oak, and the buttonwood, and the list of trees that live and thrive to advantage in the great continental cities approaches completion.

France imports a great many of her fruit, as well as shade, trees, and the utmost precaution is taken as to where these shall be planted. Handfuls of earth from each and every spot where a tree is to be placed are carefully examined and analyzed. Upon ground rich and moist the trees from the United States grow best. A sandy soil is most favorable to resinous trunks, and so on in proportion to the teachings of science and arboriculture.

In squares and parks, though more especially along the principal thoroughfares, where the trees are planted about 20 feet apart, particular attention is given to the replacing of the dead or dying by healthy trees of the same species. In this way the line of perspective is never broken, nor is the vision repelled by the absence of a single trunk.

It would seem that a great many American cities, with their tremendous expanse of stone, brick, and iron façades, might profit in the provision of shade and verdure by the example set by the cities of France. Sidewalk locomotion would be facilitated in the summer months by equal protection from the sun's rays on both sides of the street, while grace combined with genuine utility would serve to make the avenues as attractive, perhaps, as some of them are now forbidding.

An excellent reason may be ascribed for the excessive care which the French bestow upon their arteries of metropolitan traffic. The nation, as a whole, spends (whenever temperature and the elements permit) the best part of its leisure time in the open air. Home life, in the true Anglo-Saxon acceptation of the term, is something that has, in this land of sunshine and outdoor pleasure, an existence in name only. The Frenchman looks upon the streets of his native city and the adornment of the same much as an American does upon the decoration of his domicile. Hence the attraction of the former and the indifference sometimes displayed in the artistic arrangement of the latter.

Charles Kingsley, the great essayist, if I mistake not, is authority for the statement that verdure is just as essential to life as air itself, and that the kitchen garden of the laborer goes as much to add a touch of sunshine to his moral being as a bunch of roses to an invalid or the Royal Park to the Queen of England. The proof of the theory, which is a truer one than may at first appear, is in the witnessing of the crowds of poor that flock in summer time to any spot where grass and foliage exist. The French know this. They plant trees and lay out flower beds in every available corner within their cities' boundaries, while the benefit wrought thereby is too self-evident to demand interpretation.

HORACE G. KNOWLES,
Consul.

UNITED STATES CONSULATE,
Bordeaux, May 12, 1892.

RAINFALL IN URUGUAY.

REPORT BY CONSUL HILL, OF MONTEVIDEO.

I have the honor to inclose a record of rainfall during ten years at Prange's Estancia Company, near Nueva Alemania, Uruguay, in longitude 58° 21′ west from Greenwich. It will be noted that the rainfall seems to be greatest in January and December, and that February is the driest month. I hear it said that in former years the season of heaviest rainfall was from July to September—midwinter here. If this be so, the climate would appear to be changing. Considerable interest has been aroused here in meteorological matters. The chief of the bureau has now forty-five pluviometers placed at various stations throughout the country.

Table showing quantity of rainfall at Concordia estancia from 1882 to 1891.

Month.	1882.	1883.	1884.	1885.	1886.	1887.
	Inches.	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*
January	7.93	4.91	4.54	3.31	3.05	5.93
February	1.86	0.31	0.5	3.23	2.8	1.09
March	0.82	13.67	6.77	3.59	2.16	0.87
April	4.25	2.18	10.98	2.68	4.48	1.52
May	1.05	6.05	0.02	5.13	2.55	.....
June	2.8	4.64	4.08	0.11	1.83	4.36
July	2.8	5.36	0.29	5.01	0.16	3.98
August	8.85	1.34	1.14	3.97	.....	4.21
September	1.76	7.63	8.26	2.78	6.89	4.95
October	3.73	2.42	3.1	6.78	2.62	1.8
November	7.82	3.81	3.42	4.67	1.81	1.53
December	4.1	3.11	3.61	11.44	3.49	4.96
Total	46.77	55.43	46.71	52.7	31.84	35.2

Month.	1888.	1889.	1890.	1891.	Total.
	Inches.	*Inches.*	*Inches.*	*Inches.*	*Inches.*
January	0.67	13.11	4.76	4.49	52.7
February	1.64	4.8	3.47	3.38	23.08
March	2.77	6.82	9.74	3.45	50.66
April	3.53	8.76	2.66	3.94	44.98
May	0.42	5.81	1.05	5.35	27.43
June	0.68	3.48	0.96	4.07	27.01
July	3.05	3.84	1.8	10.61	35.9
August	6.39	4.37	4.08	4.89	39.24
September	7.96	0.42	0.86	0.75	42.26
October	2.12	2.14	3.5	4.08	30.29
November	5.74	2.82	1.34	2.47	35.43
December	7.26	8.88	3.83	1.18	51.86
Total	42.23	65.25	38.05	48.66	462.84

FRANK D. HILL,
Consul.

UNITED STATES CONSULATE,
Montevideo, May 12, 1892.

MEXICAN ORANGES FOR THE UNITED STATES.

REPORT BY CONSUL SMITH, OF NOGALES.

I have the honor to inclose herewith a report of oranges passing this consulate during the season of 1891–'92, showing number of boxes, value, and points in the United States to which they were shipped.

Altogether there were 75 carloads shipped during the season to points as follows: Denver, 24; St. Joseph, 19; Los Angeles, 8; Nogales, 6; Burlington, 5; Albuquerque, San Francisco, and Minneapolis, 3 each; Kansas City, 2; and Sioux City and Salina, 1 each. A peculiar feature of these shipments is that 8 carloads went to Los Angeles, where oranges are produced to so large an extent; also, 3 carloads to San Francisco, making 11 carloads to a State where the orange is the principal crop.

The increase this year over that of last was 3,598 boxes, nearly 17¾ per cent, and the price averaged about 10 cents per box higher than last year.

This industry is increasing in importance in Sonora, and I am told that the crop for next season has already been contracted for by dealers in the United States.

Table showing the quantity and value of oranges exported to the United States from Mexico from November 21, 1891, to April 30, 1892.

Whither exported.	Boxes.	Value.	
		In Mexican money.	In United States money.
Albuquerque, N. Mex.	1,093	$2,098	$1,756.03
Burlington, Iowa	1,671	3,272	2,736.99
Denver, Colo.	7,543	15,060	12,605.22
Kansas City, Mo.	857	1,600	1,339.20
Los Angeles, Cal.	2,627	5,254	4,397.60
Minneapolis, Minn.	1,028	2,042	1,709.15
Nogales, Ariz.	817	1,525	1,276.42
Salina, Kans.	378	730	611.01
San Francisco, Cal.	1,021	2,365	1,979.50
Sioux City, Iowa	512	1,024	857.09
St. Joseph, Mo.	6,394	12,613	10,557.08
Total	23,941	47,583	39,825.29

Mexican money is changed to United States money at 83.7 cents to the dollar.

In addition to the above, the value of boxes and barrels was $5,199.50 in Mexican money, or $4,351.98 in United States money.

DELOS H. SMITH,
Consul.

UNITED STATES CONSULATE,
Nogales, May 17, 1892.

IMPORTS AND EXPORTS OF URUGUAY.

REPORT BY CONSUL HILL, OF MONTEVIDEO.

Table showing the imports of Uruguay for the first three months of 1892.

Articles.	Value.	Articles.	Value.
Liquors, etc.	$747,750.33	Machinery, etc.	$1,077,961.32
Comestibles, etc.	1,029,765.17	Miscellaneous	576,718.65
Tobacco, etc.	95,020.44	Cattle on the hoof	39,990.20
Dry goods, etc.	884,225.23	Total	4,796,936.86
Ready-made clothing, etc.	345,505.52		

Table showing the exports from Uruguay for the first three months of 1892.

Articles.	Value.	Articles.	Value.
Animals on the hoof.	$253,472.50	Provisions for ships	$37,046.75
Saladero and cattle products	7,976,172.04	Total	8,398,302.03
Agricultural products	68,749.81		
Miscellaneous	62,860.93		

FRANK D. HILL,
Consul.

UNITED STATES CONSULATE,
Montevideo, May 12, 1892.

AGRICULTURAL IMPLEMENTS IN SPAIN.

REPORT BY CONSUL TURNER, OF CADIZ.

I have the honor to report to the Department, in answer to a letter received from a New York agency for some of the leading manufacturers of agricultural machines and implements in the United States, the full assurance that, if urged by a man who understands the methods that obtain in introducing the use of new machinery in the Western States, the following implements will be easily introduced into this market, viz: Plows, cultivators, harrows, hand drills, seeders, fanning mills, feed-cutters, spraying apparatus for orchards and vineyards, horse-tread powers and windmills of all styles, dogcarts, wagons, carriages, and buggies.

The laws for the collection of debts are all in favor of the creditor, and, as a rule, the Spanish dealer has a high sense of honor and is perfectly safe. Notes can always be discounted at 4 or 5 per cent in the local banks.

R. W. TURNER,
Consul.

UNITED STATES CONSULATE,
Cadiz, July 12, 1892.

ANTIGUA TRADE TAX.

REPORT BY VICE-CONSUL GALBRAITH.

I have the honor to inform the Department that when the trade tax* was passed by the government here, I was informed by the governor, Sir William Haynes Smith, that the provisions of the act would be enforced against all goods imported into the colony. At first this was carried out in a very indifferent manner; lately, however, the custom-house authorities have ceased to charge it on all goods imported through the parcel post. As most of the goods imported in this manner come from the United Kingdom, its effect is a discrimination in favor of packages of English goods.

I have drawn the attention of the authorities to this matter, and am told that goods imported in like manner from the United States will also be admitted without paying the tax. The imports from the United States through the parcel post are very trifling; and I am of opinion that the tax ought to be enforced without exception, as was the intention when the act was passed.

SAMUEL GALBRAITH,
Vice-Consul.

UNITED STATES CONSULATE,
Antigua, July 26, 1892.

Ficus elastica of Nicaragua.—Mr. J. Crawford, of Leon, Nicaragua, from whom an interesting contribution, entitled "India-Rubber Producing Vines and Trees in Nicaragua," was published in the SPECIAL CONSULAR REPORTS on India rubber, in a communication to the Department under date of May 20, 1892, writes as follows:

I omitted, intentionally, because so very slow a grower, one good kind of rubber-yielding trees, indigenous to Nicaragua, called here the "*Matapala*," and similar to the *Ficus elastica*, which the English have chosen as preferable and are planting and cultivating in Ceylon. There are species in Central and South America, however, which, on and after the fifth or sixth year, attain vigor and size enough to yield a large annual or biennial flow of the elastic (containing milk-like juice) without exhaustion. They soon recover from the deprivation, while the *Ficus elastica*, or aërial-rooted tree, requires fourteen to twenty years before it has size and strength enough to yield India rubber in profitable quantities and then recover from the bleeding or milking. The *Matapala* tree has a high, extensive, thick foliage, and grows into, and often through, its own trunk or trunks. I have counted over forty-two tree trunks, from 6 to 30 inches in diameter each and from 20 to 60 feet high each from the ground to the branches, with foliage all interconnected in vital functions, as well as in body, with each other and forming one tree.

* Twenty-four cents per 5 feet, cubic measurement, on all imports.

CONSULAR REPORTS

ON

COMMERCE, MANUFACTURES, ETC.

No. 145.—OCTOBER, 1892.

ASPHALT OF TRINIDAD.

REPORT BY CONSUL PIERCE.

In compliance with Department dispatch, instructing me to make a full and exhaustive report on the subject of asphalt in Trinidad, covering the supply, manner of taking and handling, the exportation, and the laws and regulations applicable thereto, and inclosing a letter addressed to the Department, in which it is suggested that I make a "complete history," I have the honor to submit the following report:

The only asphalt known to the market as Trinidad asphalt is deposited in and near the small village of La Brea, in the southwestern part of the island of Trinidad, about 45 miles south of Port-of-Spain, in the Gulf of Paria. There are other well-known deposits of asphalt in the island, but these are not now being worked, and are only referred to herein incidentally. Neither this kind, asphaltic oil, nor another kind ("glance"—more valuable than any other) is found in the lake or abutting lands.

Although hundreds of thousands of tons of asphalt (or pitch, "la brea" being Spanish for "the pitch") have been shipped from La Brea and vicinity, there are very few conveniences for shipping—none worth speaking of, except a pier, to which ocean vessels can not come, erected by the Trinidad Asphalt Company, where crude asphalt may be dumped from wheelbarrows on to flats, to be carried out to the transporting vessel. The crude asphalt from the land and part of it from the lake is carried in baskets or tubs from the shore to lighters, which are usually 20 feet or more from the dry land, the carriers employed walking a gangway. The *épurée* (boiled pitch), exported exclusively by the Trinidad Asphalt Company, is loaded from shore to flats with skids.

In addition, there is no harbor at La Brea, only an open roadstead, and vessels are frequently inconvenienced in loading by the boisterousness of the

sea, owing to which considerable asphalt is lost through mishaps before it is placed on board the vessel. Probably the greater part of the crude asphalt, on being carted to the seashore, is dumped there to await the arrival of the transporting vessel, though much of it is conveyed from the excavation to the transporting vessel without this delay.

It is well to observe here that steamboats (carrying passengers and cargo) pass La Brea on Wednesdays and Fridays, and passengers getting off there at low tide are rowed near to the shore in small boats and carried the remaining distance in the arms or on the backs of muscular men.

It is quite a difficult matter to say what the market price of asphalt is at this port, because it is subject to so many anomalous conditions. The original cost to the Government or to the owners of the lands prior to the asphalt rage was substantially nothing, and the cost to those who have since purchased lands varies.

In respect to present dealers, very little, if any, pitch is sold in isolated quantities. The usual contract is for the owner or lessee of the land to deliver so much pitch at a certain price annually for a term of years. I should judge that those dealers who have contracted for La Brea land pitch within the last six months have had to pay somewhat more than the lake pitch is sold for to shippers to Europe, to wit, 28*s.* 6*d.*, or $6.84 in local money, free on board.

The following itemized estimate per ton in respect to land asphalt is believed to be a fair approximation:

Price of pitch in the ground	$4.00
Digging, overlooking, and cleaning	.50
Carting	.40
Loading lighters and loading ship	.30
Lighterage from shore to ship	.50
Contractor's profits, mercantile commission, and all other expenses and losses	1.10
Export duty	1.20
Freight and insurance to New York	2.25
Total	10.25

When large quantities of asphalt are being handled or other favorable conditions intervene, this total could, of course, be reduced. It is a matter of public record, for instance, that the first cost of the asphalt taken from the pitch lake by the Trinidad Asphalt Company is only 40 cents per ton, and it can be dug more readily than the land asphalt.

I have heard it claimed that all the asphalt at La Brea is substantially one deposit, and that applying the designation of "lake" to only a portion of it is incorrect; but the only part that can be said to be like a lake is alone called the lake by the community, and I shall therefore in this report designate a certain portion as lake asphalt or pitch and the other portion as land asphalt or pitch, and both under the general name of La Brea asphalt or pitch.

The village is on an extreme point called La Brea Point; another extreme point to the east is called Point d'Or. The lake is further inland,

being southwest of these two points and about a mile from them, and about two-thirds of the way from Point d'Or to the opposite side of the peninsula. The lake has an elevation of 138½ feet, according to Wall and Sawkins, above high water, and on three sides the land slopes from it. It is circular in form, and covers, according to a Government survey in 1886, 109 acres 9 perches, and it is believed to contain several million tons of asphalt. The geological report of Wall and Sawkins puts the maximum amount which can be expected to exist at 4,752,000 tons. Since this estimate several hundred thousand tons have been removed. The report mentions that the term "inexhaustible," applied to the lake, "has probably arisen from the circumstance of artificial cavities rapidly closing up, which may have led to the supposition of the substance being reproduced or generated as fast as removed; but it is essential to remember that every pound abstracted diminishes the remaining quantity by that amount." I believe from the information I have obtained that the contents of the lake have decreased in volume within the last decade, indicating that the "supply," if it has one, is not equal to the drainage that is now being made from it.

Persons who have seen a large round pond, substantially dried up, with little strips of clear water irregularly intersecting its bed, here and there patches of vegetation, and a slushy looking place near the center with fish bubbles coming up, the entire bed blackish and uninviting, can form a very fair idea of the general appearance of this famous lake. An odor described to be like that of sulphureted hydrogen gas is emitted at the sloppy looking place called the "place of supply," where many gaseous bubbles appear. In passing over the lake one will see more or less of these little bubbles, and if he stoops down and catches the odor from them he will find it the same as the odor at "the place of supply" near the center. There are also over the lake more or less little swellings of different shapes and sizes, and I am told that the smaller of them (say an inch square) contain only gas and that some of the larger ones (say a foot square) contain both gas and decayed vegetation.

There are a large number (say two or three dozen) land islands over the lake which would probably aggregate about 3 or 4 acres. They are covered with vegetation, and some of them support trees 20 or 30 feet high; but I am told these islands do not come up from the bottom of the lake nor do they bear down any considerable distance into the lake. Mr. J. W. McCarthy, the local manager of the Trinidad Asphalt Company, informed me that he destroyed one of them and the pitch under it rose to its own level, or the general level of the lake. A horse may be ridden on the lake and up to the "place of supply," and, under particularly favorable conditions, I am inclined to think he might be ridden through it. It is difficult to give a very satisfactory description of this particular spot, and no two descriptions of it can be exactly alike, for it is never identically the same on any two occasions. In an open space, say 50 acres or more, in which there is no vegetation whatever, may be seen a zigzag, irregularly outlined spot, which

undergoes constant change in shape and size (when I was there last and took a good look at it, it was bow-shaped and approximated an acre in size). It differs from the surrounding pitch in outward appearance, as freshly molded or bright lead would differ from lead of a duller and darker hue. All of this fresher-looking pitch is softer than the pitch surrounding it; but on some of it, at the more distant edges, one may walk without sinking below the heel of his shoe, and I apprehend from appearances, and was so told, that it is only a matter of time for the outer parts to become indistinguishable from the body of the surrounding pitch. Within this particular area is located what is called "the place of supply," which is one or more spots where the pitch is always softer and where, in the hotter part of the day, the pitch, or rather the water surrounding the pitch, fairly boils. These soft parts constantly shift their position, and their fomentations undergo great change, seemingly regulated by the heat of the sun. I am assured by witnesses, whose word I can not call in question, that they have seen the "place of supply" when a person could not have walked into it, both on account of the intense heat and the probability of being engulfed.. I have never seen it present so terrible an aspect. On one afternoon, when it was probably in about its usual state, in the hottest part of the day, I saw a man walk into it with impunity, and it only came up to the calves of his legs. He picked up a handful of the pitch and handed it to me. It was as pliable as soft putty, and I manipulated it without any of it sticking to my hands; but the water which oozed from it somewhat discolored my hands, and I was told that if I had continued the manipulation longer, till all the water oozed out, the pitch would have become sticky. Early one morning (8 or 9 o'clock) I visited the "place of supply," and the man I had with me walked all over the softest spot without sinking deeper than his foot. At that time two carts containing barrels were being loaded with the "liquid pitch," and the process was to dig and pull it up with picks in lumps, which were put by hand into the barrels. I was told that in the hot part of the day the pick was dispensed with and the shovel used instead.

One of the cartmen pointed to a particular place, a foot or two square, where he said he had been digging that morning and which had filled up. The man with me stepped into this place and gradually sank nearly to his knees, but sank no further. I also noticed that this pitch, unlike that on the previous occasion referred to, stuck with considerable tenacity to the man's legs.

The little channels of water referred to constitute quite a relief to the view. These are quite clear and pretty. They vary in width; but, unless unduly swollen by rainy weather, they may be roughly estimated at 2 to 6 feet wide and, say, 1 foot to 2 feet deep, though in places the water is much wider and deeper. By these deposits of rain water the lake is divided into a great many irregular divisions. Several persons told me that it was their understanding that these little channels rose and fell with the tide, which seems unreasonable; but, as the opinion is entertained by some of the residents of the neighborhood, I submit it. The pitch comes boldly up to the

water, but rarely, if ever, slopes gradually into it; but at the water's edge it is inclined to curve down abruptly, and under the water it does not promptly adhere to the pitch on the adjoining area.

It is understood that the pitch is in constant motion, and the theory has been advanced that each of these irregular divisions has a motion of its own. It would seem, from the appearances, that the water and the outer part of the pitch of the adjoining division have a very repelling effect on the advancing pitch, or else these several divisions of pitch do turn under and revolve respectively within themselves. But evidently the pitch yields in a marked degree to the influences of water. I noticed a little spot of water about 6 feet wide, which was probably 3 feet deep—a depression which, if not originally caused by the settlement of water on the spot, is kept in existence by the water. In other words, the pitch would doubtless find its own level were it not for the water. I am strongly inclined to think that the "place of supply" described above, if not the source of supply or generation, is a source of general motion, the degree of motion lessening as it recedes from this center. The fact that there is a large area next around the "place of supply" on which no vegetation grows, and that (in addition to the well-defined land islands) more or less vegetation is found as you approach the border, seems to indicate that the motion near the "place of supply" is too great for sufficient earth to accumulate on the surface to support vegetation.

ASPHALTIC DEPOSITS IN GENERAL.

I beg to observe that the only work on the geology of Trinidad is that of Wall and Sawkins, published in 1860 "by order of the lords commissioners of Her Majesty's treasury." The work divides its comments on Trinidad asphaltum into three parts, one giving a general description, the others relating to its economic capabilities and to "asphaltum more or less mixed with woody matter." The last two will be quoted further on in this report, but at this point, barring the illustrations, I quote the descriptive part in full:

General Description.

In the treatment of this subject the following divisions will be introduced:

(1) General diffusion of asphaltic and bituminous substances.

(2) Principal distinctions in the forms of occurrence.

(3) Special phenomena exhibited by the Trinidad asphaltum.

(4) Derivation and genesis of the latter.

The first two sections are not essential to the descriptions of the local circumstances to be enumerated, but, forming a species of introduction to the subject, they will serve to invest it with a character of generality, augmenting the interests without diminishing the efficiency of the succeeding considerations.

I.—GENERAL DIFFUSION.

All the asphaltic substances have been usually regarded as of local and limited occurrence; they are in reality, however, widely disseminated, especially in the tropical and subtropical regions, which evidently indicates that they are due to extensively operating natural causes, and not, as usually supposed, to the accidental combination of special agencies.

A detail of the localities where these substances are especially abundant may further enforce the above views.

Commencing with the adjacent mainland, we have the authority of Codazzi,* who says:

"There are inexhaustible deposits (*minas*) of mineral pitch in the provinces of Merida and Coro, and above all, in that of Maracaibo; in the latter it is employed for calking the ships which navigate the lakes.

"Springs of petroleum are abundant in Trujello and Cumana" (Gulf of Cariaco).

The latter are also mentioned in detail by Humboldt (Travels). The soil of the vicinity of Maturin, on the Guarapiche, is stated to be impregnated with bitumen, and an island in the mouth of that river, which flows into the Gulf of Paria, is termed Isla de la Brea.

Respecting the existence of the substance in the Antilles, Mr. Cowling Taylor observes:† "In fact, the entire chain of the West India and Windward islands presents similar phenomena of petroleum springs, beds or veins of asphaltum, and accumulations of mineral pitch, and traces of metamorphic and volcanic rocks in great abundance."

In support of the above he enumerates especially Barbados (p. 249), where "compact bitumen or asphalt abounds," "a green mineral naphtha," "and the calcareous rocks are frequently impregnated with bitumen."

In Cuba asphalt, or chapapote, is very extensively diffused, and is often termed bituminous coal, but is in reality a bitumen, as shown by the accompanying analysis:‡

	Per cent.
Carbon	34.97
Volatile matter	63
Ashes or cinders	2.03
Total	100

The specific gravity is 1.142 to 1.197.

The same author, who visited several of the deposits, says the asphalt occurs in the form of wedge-shaped veins, "in a region of metamorphic and magnesian rocks, of which the most prevalent are serpentines, diorites, euphotides." Some of the masses of chapapote are of great magnitude.

"Petroleum leaks out in some, indeed in numberless, places in this delightful island from amidst the fissures of serpentine, and perhaps has deeply seated sources." (P. 246.)

New Grenada.—Bitumen prevails along the margin of the Magdalena Valley (op. cit., p. 231).

Peru.—Asphaltum of typical purity occurs at Coxitambo. Analyzed by Boussingault with the following results: Carbon, 75 per cent; hydrogen, 9.5 per cent; oxygen, 15.5 per cent; residuum, 0.16 per cent; specific gravity, 1.080; fracture eminently conchoidal, possessing a high degree of luster. (P. 232.)

Mexico.—"In the interior of Mexico are lakes of fresh water, where the chapapote is found bubbling up to the surface. It has a pungent smell, like that of liquid asphaltum, and possesses some of its qualities." (P. 222.)

Texas.—"An announcement has been made of the existence within 100 miles of Houston of a small lake that closely resembles the pitch lake of Trinidad. It is filled with bitumen, or asphaltum, and is about a quarter of a mile in circumference. In the summer months a spring occurs near the center of the lake from which an oily liquid (probably petroleum) continually boils up from the bottom. This liquid gradually hardens on exposure to the air, and forms a black, pitchy substance similar to that which forms the sides of the lake. It is said to resemble precisely the bitumen of Trinidad." (P. 223.)

France.—At Labsann, near Strasburg, there is lignite, bituminous sandstone, and asphaltic limestone. Bituminous limestones also occur at—

Moys (La Limigne), 22 per cent of asphalt; Puy de la Bourière, 19 to 21 per cent of asphalt; Puy de la Sède, 14 to 16 per cent of asphalt; and Seyssel, department of Ain, 10 per

*Geografía fisica de Venezuela, 154. †Taylor, statistics, p. 244. ‡Statistics of coal, 247.

cent of asphalt. Other localities are: Aniches (department du Nord), asphalt and bitumen; Les Landes, bituminous sands; and petroleum springs at Bieriers (department of Hérault) and Clermont (Puy-dè-Dôme). (P. 463.)

Portugal.—A mine of asphalt of good quality has been discovered in the neighborhood of Alcobaca. (P. 561.)

Ionian Islands.—Petroleum and tar springs occur somewhat similar to those of Trinidad.

Syria.—Asphalt, or bitumen, is in great abundance on the shores of the Dead Sea. In its black color and fracture it resembles ordinary pitch. The average density is 1.16. In other essentials it seems to resemble the chapapote of Cuba. (P. 632.)

There is a deposit of bitumen on Mount Lebanon, in rocks probably of volcanic origin.

Caucasus.—In the provinces of Shirvân and Daghestan there is a great abundance of naphtha, especially on the promontory of Baku.

Crimea.—An extension of the same formation exists in the peninsula of Kertch, and there is also a bituminous formation on the peninsula of Taman. (P. 634.)

Arabia.—Bitumen and petroleum are very abundant in strata wholly composed of oceanic animal matter, and sometimes exuding from fissures and abrupt declivities, caused by the intense heat of the climate. (P. 634.)

Persia.—Bitumen, petroleum, and naphtha are found in all the countries bordering on the Tigris and lower Euphrates, and also in Koordistan. (P. 635.)

Burmese Empire.—In the province of Ava there are beds of brown coal and wells of petroleum.* In the province of Pegu a vast quantity of asphaltic oil is collected, amounting annually to 100,000 tons. The substance is associated with tertiary coal. (P. 652.)

China.—Bituminous substances are stated to be diffused in this Empire, but the details are not ascertained or even the fact properly certified.

These instances are, it is presumed, sufficient to illustrate the general occurrence of asphaltum and asphaltic products; the enumeration is not supposed to include all, but only the principal localities, and in respect to which the particulars are most fully established. There is one obvious circumstance deducible from the preceding statements, viz, that the substances are almost exclusively confined to the warmer regions. This may have an important reference to their formation, but, in the present state of our knowledge on the subject, we are not aware how far the element of heat may be concerned in the generation.

II.—MODES OF OCCURRENCE.

There are diversities both in the strata with which the asphalt is associated and in the nature of the deposits. These seem referable to three principal divisions:

(1) In which the containing and adjacent rocks are of igneous origin. This is the case in Cuba. Mr. Taylor remarks:† "From the direct observations that we have been enabled to make it seems very probable that all the bituminous matters, whether known under the names of chapapote, asphalt, mineral pitch, petroleum, mastic bitumen, liquid or fixed bitumen, and other terms. Simple varieties of the same mineral substance appear at the surface at the points of fracture in the disturbed and metamorphic regions; in other words, in the centers of dislocation of the beds." The latter part of this sentence would seem to indicate that the associated rocks are sedimentary, but in other passages of the same article they are stated to be serpentine, euphotide, diorite, evidently of the true igneous type. The asphaltum at Mount Lebanon is also represented as contained in igneous or volcanic rocks.

(2) In which the containing rocks are stratified and of the primary or secondary epochs. The mode of occurrence is usually that of dissemination in the granular form throughout the entire stratum, or that of springs of petroleum, naphtha, etc., issuing from the soil or exuding from the fissures of the beds. The bituminous limestones of France are instances of this case, and perhaps similar strata in the vicinity of the Dead Sea.

*This district has been examined recently by the officers of the geological survey of Bengal, who have established the age of the fuel to be Eocene, but no further details are accessible.

†Op. cit., 246.

(3) Where the deposits are in formations of Tertiary age, and usually accompanied by lignite or brown coal. These are the most abundant sources of asphaltic substances, and include those of Pegu, Trinidad, Maracaibo (according to Boussingault), and probably several of the other localities enumerated in the preceding section; but the descriptions are often too vague to ascertain positively to what geological group the deposits must be referred. As the Trinidad bitumens belong to this division many of the succeeding remarks are equally applicable to all the asphaltums of similar age and similar associations, and the species of derivation we shall see reason to adopt is probably the one by which most of them have been produced; but this method is not intended to apply to the first two divisions, as other causes may have been concerned in the generation, where the circumstances are very different to those to be considered.

III.—SPECIALTIES OF THE TRINIDAD ASPHALTUM.

Three principal varieties of this substance are found here, viz, asphaltum glance, ordinary asphaltum, and asphaltic oil.

The first is hard and brittle, of an intensely black, brilliant luster, and eminent conchoidal fracture. It contains but a small proportion of earthy impurity and only a little water. This is the rarest of the three, and at the same time the most valuable.

The second comprises the usually occurring material, which is of a brownish-black color, dull, and generally even fracture. It contains from 20 to 35 per cent of earthy admixture, a considerable proportion of water, and possesses the property of plasticity, which, however, gradually disappears on long exposure to the sun and atmosphere. This is a very essential characteristic, to which many of the phenomena exhibited are attributable.

The third occurs associated and diluted with water, but when concentrated appears as a dense, black fluid, with powerful bituminous odor. If collected in an open vessel, the more volatile portion evaporates after a few months, leaving a solid, black substance of similar appearance and analagous properties to the asphaltum glance.

The existence of bitumens is manifested in a variety of ways. Sometimes an area of one or more acres is occupied by a number of cones about 2 feet high and consisting of asphalt associated with earth; in other cases there is only one mass, of much larger dimensions, but similar composition. These have frequently orifices in the center by which the substance rises to the surface in a liquid or highly plastic form. Very frequently the asphalt is only mixed with the soil in pieces or small blocks irregularly disseminated or passing down into the laminæ of the substrata; the surface in this case is usually of much greater extent. The asphaltic shales and sandstones of La Brea furnish soils of this description. Springs of asphaltic oil or petroleum are abundant; these often collect into pools, forming deposits of what is termed "liquid pitch."

There are also submarine phenomena of a similar nature. Masses of the solid material known as pitch banks exist off the shore of Oropouche and opposite Erin, while the places where the liquid bitumens issue from the bed of the sea are indicated by the oily substance floating on the surface of the water and the powerful odor which prevails in the vicinity.

Asphaltum glance is found on the beach at Guapo and Guayguayare, especially after stormy weather.

In consequence of the plastic nature of the ordinary bitumen already alluded to, it invariably yields to pressure, until a new equilibrium is established; thus where houses have been erected on strata containing bituminous laminæ or masses, the additional weight displaces the latter, the foundations give way, the buildings diverge from the perpendicular, and their stability is endangered. Similarly, where excavations have been opened in the solid asphalt, the pressure of the sides forces up the center, and the cavity speedily closes. Even in isolated blocks of the asphaltic shale, or sandstone, the bituminous layers are forced or expressed from their original position, accumulating on the sides or surface of the masses, and this is effected by the weight of merely a few inches or feet of the stratum. There are numerous instances of this in the fragments separated or fallen from the parent bed at Point La Brea. It must

be manifest that this is a sufficient cause to account for the appearance of the solid and semi-solid materials at the surface, as the force urging them upwards, of course, augments with the depth and consequent pressure of the superincumbent strata. Reasons will be presently advanced for concluding that the production of asphalt is in constant operation, or at least in any particular locality, till the substance from which it is generated becomes exhausted. This explains the continuous renewal at the surface, since, of course, it is only subsequent to the formation of the asphalt that the property of susceptibility to pressure is assumed.

Other causes must be sought for the elevation of the liquid conditions of the substance. Sometimes they are carried up in association with water, but probably their production is accompanied with a development of gas, which, being confined in the intergranular spaces of the stratum, exerts a force on the fluid particles, compelling them to rise through any fissures or joints which may exist. In confirmation of this view, the oily liquids are frequently accompanied by an emission of gas, in which sulphureted hydrogen is sometimes detected.

Where the form of the surface is favorable to the collection of the asphaltic material, accumulations are formed, varying in magnitude with the extent of such surface and the richness of the sources. The pitch lake is an eminent instance of the concurrence of conditions favorable for a large accumulation. It seems to occupy a depression of the strata. Original inequalities have been smoothed off and the cavity filled up to the present level of 138½ feet above high water. The contents of the whole area being probably some millions of tons, considerable forces must have been concerned in the elevation of all this material to its present position.

The surface (99 acres) does not present a continuous sheet of asphalt, but is interseeted by numerous depressions, in which the rain water collects. As these frequently anastomose, the lake is divided into a number of small bituminous areas with interaqueous spaces. Each of the former (judging from the appearances on the adjacent asphaltic plateau) has contained a center of emission, from which the substance has issued and gradually advanced until the material from the surrounding foci, being encountered, further progression was impeded in the vertical, in place of the horizontal, direction.

On first rising to the surface the asphalt contains a considerable admixture of oily substance which acts as a solvent, rendering the former semifluid, in which condition it flows but rather slowly. This oily element gradually evaporates on exposure to the rays of the sun, leaving a more solid substance, but still invested with a certain internal mobility of the particles. The outer portion is naturally harder and less pliable than the inner, as the volatile combinations can more readily escape, and consequently when two adjacent masses come in contact they are sometimes not sufficiently plastic to unite or join together, but leave a division, which originates the depressions in question. The curved surface of the asphalt is, however, so generally manifested that it probably invariably assumes that form when advancing or augmenting vertically; and, in support of this view, the material which has emanated from a central orifice and undergone progression is very usually found disposed in similar curves over the whole of the bituminous districts. The deepest cavity observed was about 10 feet. Mr. Manross* ascribes a revolving motion to these areas, which he terms "ebullition," and supposes that the material is continually passing from the center to the edges, where it "rolls under" and rises again in the middle. Nothing of this sort was observed by the authors, nor is it very obvious to what force or what influence this is attributable. There seems, however, to be a daily motion of another description, due to the expansion occasioned by the heat of the sun. On unclouded days the asphalt attains an average temperature of about 140°, and, as it sinks during the night to 70° or 60°, suffers a variation in the twenty-four hours of 70° to 80°, which must produce a considerable change of volume, penetrating some depth below the surface.

The space between the aqueous channels is not perfectly level, but, almost without exception, exhibits a slight curvature, of which the apex occupies the center. This is probably an

*On the "Pitch Lake of Trinidad," American Journal of Science, September, 1855. This is a very good description of the external features of the lake and locality.

evidence of the expansion contended for, but the opportunity did not occur for proving that this convexity diminishes in the night.

The surface is frequently marked with ridges, especially near the edges; these are due to the constant expansion and contraction which is supposed to occur.

The form of the areas is sometimes almost, and usually approximately, circular.

The temperature of the water in the hottest part of the day was found to be 96°, while that of the air at some distance from the lake was 88°. This water seems generally pure, but where the asphaltic substances or gases are issuing it is, of course, affected.

There is no perceptible inclination of the surface, at least none amounting in any direction to 30′. In a few places trees and bushes are growing; the soil of these spots is precisely similar to that on the adjacent asphaltic plateau, viz, sandy bases impregnated with bituminous matter. These are either remnants of the original surface or are localities where the principal portion of the asphaltum has been removed, leaving the earthy admixture in excess.

Small dome-shaped swellings or protuberances from 2 inches to 1 foot in diameter are very common; these are always hollow, and the covering, about half an inch thick, seems to have been raised by gaseous pressure developed in the conversion of material into asphalt.

There are generally two or three places where the emission of the semifluid substance is still in operation. This is accompanied with an evolution of sulphureted hydrogen gas; the circumjacent surface is at first soft, but, as before explained, attains the ordinary consistency after a time. These manifestations of activity are but slight compared with what prevailed at an earlier epoch, when this large deposit was formed. The sources are now relatively exhausted; but the substance itself remains, an evidence of the magnitude of the actions which have operated over so limited an area.

The La Brea Point is lined with masses of asphaltum, derived from the blocks and fragments of the bituminous strata scattered about. As already stated, wherever a free and exposed surface exists the substance exudes from the interior and accumulates on this surface, assuming generally a dome-shaped form, and sometimes rising in campanulate bosses, which are hollow, usually several feet in diameter, and with a shell of 6 to 8 inches, elevated by the pressure of gases internally generated by the solar heat to which they are especially exposed. Under the influence of a high temperature the volatile constituents will escape from the outer envelope, but at a certain depth, being no longer able to penetrate the substance, and assuming the gaseous condition, will collect together at such lines as the junction of the asphalt and the stratum and exert an expansive force, producing the protuberant forms observed.

The afternoon sun strikes with full force on this coast, and, the density of the vegetation excluding the breeze, the temperature, further augmented by refraction from the highly heated surfaces of the asphalt, becomes almost insufferable.

A species of natural coke is occasionally observed along the shores, with the porous structure and prismatic form of the artificial product, but, of course, much denser on account of the large proportion of earth; the adjacent portions of the stratum or cliff are frequently reddened and semibaked, evidencing the considerable degree of heat which has attended the operation.

The outer surface of the asphaltic masses often consists of a brown, porous, sandy earth, which occurs extensively about La Brea, and is evidently the mineral residue of the substance; this shows that there is not only a removal of the volatile constituents, but also an expulsion, and perhaps oxidation, of the fixed carbon.

All previous descriptions refer the bituminous material scattered over the La Brea district, and especially that between the village and lake, to streams which have issued at some former epoch from the latter and extended into the sea. This supposition is totally incorrect, as solidification would probably have ensued before it had proceeded one-tenth of the distance, and such of the asphalt as undoubtedly escaped from the lake has not advanced more than a few yards, and always presents the curved surfaces already described, and never appears as an extended sheet. These bituminous masses or layers are too intimately associated with the soil and substratum to have been derived from any foreign source.

Wherever they occur, asphaltic shale or sandstone is found to occupy the surface. The borings which were prosecuted near the shore, after passing through several masses of asphaltum, arrived at a bed of clay entirely destitute of bituminous admixture. The latter is undoubtedly a product of particular strata, of which the two specified above are eminent instances. The ridging and furrowing on portions of the road to the lake are not evidences of flowing, but due to constant expansion and contraction, as well as the effects of traffic. The consequence, then, to which we are conducted by the above facts, is that where a stratum highly charged with bituminous matter occupies a section of country, portions of the asphalt appear on the surface either in extended sheets or in detached pieces, as in the gardens of La Brea village, or in large masses, as at La Brea Point, where they protrude for some distance into the sea.

IV.—ORIGIN AND GENESIS OF THE ASPHALTUM.

In the preceding description it was scarcely possible to avoid assuming some conclusions respecting the derivation. These will now be more rigorously considered. The section exposed in the low cliff at Point d'Or is extremely instructive. The asphaltic shale is perceived over a bed of loose, yellowish sand, which contains no traces of any bituminous substance. The nature of the former stratum is that of a brown, porous, shaly sand, including masses of asphaltum rather irregularly distributed, but with a manifest tendency to occupy the directions of stratification. A close inspection of the appearances shows that this light and porous character is due to the loss of material, evidently asphaltum, which has secreted from all parts of the stratum into the lines of weakness. This accumulation, and consequent exertion of expansive force, is proved by the frequent elevation of the laminæ to 30°, even 50°, when the true inclination of the stratum does not exceed a few degrees. The asphaltum prevails extensively on the surface and occurs around the whole point, having either moved in a plastic condition from above or exuded from the fallen blocks of the parent stratum. When this bituminous bed thins out the asphaltic material disappears from the surface, as in Point d'Or pasture. These circumstances justify the conclusion that the origin of the asphalt is in the stratum itself, and not referable to any process of distillation or ascension from below, since it is natural to suppose some evidence of the passage through the subjacent sands would have remained.

The same conclusions are verified by numerous repetitions of asphaltic strata, intercalated between nonasphaltic, along the coast from Point la Brea to Guapo; and an additional interest attaches to many of the sections from the process of segregation being still in operation. Every stage may be observed from the complete diffusion in minute particles to the concentration in large masses. This tendency to aggregation is very marked and constant. The reason is rather obscure, but possibly the development of gas in the formation of the substance expels it from the pores into the directions of minimum resistance. Sands and sandstones generally contain the asphalt as cementing matter around the granules. In this case the porous nature of such beds, compared with shales and clays, may have permitted the continual escape of any gases or vapors which were generated.

If, then, these bituminous substances are products of individual strata, they must have been either originally deposited with the other mineral matter or subsequently generated from preexisting material. On the former supposition, why should certain beds contain them in abundance and no trace exist in others above or below? Besides, we have no proofs that bitumens contribute in anyway to the original formation of strata. The most powerful evidence may be adduced, however, in favor of the other method, since many of the peculiarities exhibited seem due to the modification of an old, or the development of a new, material. The only substances containing sufficient carbon and hydrogen for the formation of asphalt and likely to be included in strata are vegetable and animal remains. The former are particularly abundant at La Brea, where most of the asphaltic beds have been originally carbonaceous or lignitic shales. The conversion from the ligneous into the bituminous structure may be seen in every stage, from the first deposit (usually parallel with the fibers) to the total obliteration of organic texture, when nothing but the external form of the wood remains.

This change does not appear to operate, or by no means so extensively at least, in strata of pure carbonaceous contents, such as lignite, but it is rather characteristic of those in which a large proportion of earthy matter exists. This seems to refer it to some reaction of the containing bed on the vegetable substances, and is probably a modification of the process producing lignite, since contiguous strata may be one lignitic, the other asphaltic, and even the same stratum occasionally exhibits both varieties. These circumstances conduct us to the proposition that the bituminous substances of La Brea, whether fluid or solid, have been formed from vegetable material by direct conversion at the ordinary temperature.*

This view of the genesis of asphalt is no speculation, as the facts which crowd around it invest the conclusion with a character of the highest probability, almost amounting to certainty; for not only are there local evidences, but it also suffices for the explication of the various phenomena.

The first department of the process consists in the formation of a black, oily substance, similar to what arrives in a liquid form at the surface, and has been termed asphaltic oil. This may not be invariably the case, but has been frequently noticed, particularly with respect to ligneous masses as distinguished from leaves and fragments. There is a constant endeavor on the part of this fluid to escape from the material in which it is formed. Some specimens of wood in the earliest stages of conversion continued to discharge the oil for several months after being placed in the Museum of the Survey at Port-of-Spain, and nothing is more common in the La Brea district than to observe it exuding from the soil or issuing from the fissures in the cliffs. Is this discharge due to expansion consequent on the new structure which is induced, or is the generation accompanied with the formation of gases or vapors? Whatever the cause, the circumstance seems sufficient to account for the elevation of the oils in the form of springs, etc.

It would be interesting to ascertain whether paraffin exists in these oils, as the origin of that substance has been ascribed to distillation.†

The residue, after the separation of this material, consists of the ordinary asphalt, usually containing the oils in sufficient quantity to render it highly plastic. In this condition, as before stated, segregation of the particles ensues, and wherever pressure operates expulsion from the strata is effected. The delivery at the surface may depend on the weight of the superincumbent strata, on augmentation of volume, or on the production of gases. The earthy admixture (20 to 30 per cent) is taken up either during segregation or in forcing the upward passage.

The purer varieties, such as approach or are identical with asphaltum glance, have been observed in isolated masses, where there was little doubt of their proceeding from ligneous substances of larger dimensions, such as roots and pieces of trunks or branches. In this case no displacement from the original position has ensued, and consequently the material is free from earthy impurities. There are some instances where the oil seems to have solidified in

* It has not been possible to examine what this action is, as such an investigation would involve a long chemical research, which, after all, might not be successful. Bischoff states (Chem. and Phys. Geol., Cavendish Soc. Trans., vol. 1, p. 288) that in the derivation of resins and asphalt from wood a large proportion of carbonic acid and a little water are separated; but in the coal series of minerals the reverse is the case. On page 281 (op. cit.) the same author gives important formulas, showing how the bitumens may be generated by the mineralization of wood, giving three cases: (1) In which 58 per cent of carbonic acid and 14.8 per cent of carbureted hydrogen are disengaged; (2) where 56.2 per cent of carbonic acid is disengaged and 2.32 per cent of hydrogen oxidized; (3) where 36.62 per cent of carbonic acid and 15.23 per cent of water are disengaged.

Though not stating positively that any of the deposits of asphalt are referable to this origin, Bischoff evidently assumes this principle of conversion to be of ordinary occurrence, especially in such passages as the following: "Lignite passing into mineral resin, amber, retinite, asphalt," etc.

"Asphalt is not an uncommon product of the decomposition of organic remains."

"In the decomposition of vegetable substances there are formed, besides carbureted hydrogen, liquid and solid hydrocarbons, such as naphtha and petroleum or mineral oil, mineral tar" (pp. 288, 290, 291).

See also the evidence afforded by Mr. Cruger's microscopical researches on this subject at pages 175, 176.

† The negative results in respect to paraffin obtained by chemists in the United States were from the solid asphalt of the lake.

the joints or fissures of strata (as in veins traversing bituminous marl near San Fernando), affording a substance of typical purity.

It is also necessary to admit a species of conversion by contact, since pieces of wood included accidentally in the asphaltum—for example, by dropping from overhanging vegetation—are often found partially transformed into that material. The interior of the hollow protuberances already described as existing on the surface of the lake generally contains traces of the lighter portions of vegetation. These are manifestly derived from leaves, etc., which are blown about the lake by the wind, and, eventually becoming covered with the asphalt, a process of conversion ensues, accompanied by the formation of gaseous substances, which involves the distension of the surface and the production of the small swellings in question.

Some asphaltic sandstones, in which bituminous matter is disseminated as a cement around the siliceous granules, possess a very homogeneous structure, and at first it was supposed the former was derived from comminuted preëxistent substance and deposited as sediment along with the sand; subsequent examinations, however, have detected strata in which the production of the granular variety of asphaltum was in progress, and, as the other circumstances were analogous, no hesitation was experienced in referring both to the same origin.

The carbonaceous shales, etc., in which the generation of the bitumens has operated exhibit strong resemblances to the present swamp soils, and the diffusion of the vegetable débris is very similar. On the Guapo shore there is a detached piece of stratum which can scarcely be distinguished from the surface of the adjacent swamps. It is penetrated in all directions by numbers of fibers, small twigs, and blades of grass, much of which material is transformed totally or partially into asphalt.

Over the greater portion of the La Brea district the action has ceased, and there are but slight traces of the origin; sufficient activity, however, still remains to indicate clearly the source of material and the march of development. On the institution of comparisons, the results in both cases are so analogous as to stamp them with the evidence of being produced by similar operations.

The existence of porcelanite in the vicinity of the lake might lead to the supposition of distillation being concerned in the asphaltic phenomena. Just the same appearances as those described are noticed in other localities remote from all traces of those strata, and a reverse action seems rather to prevail, as where the asphalt is coked or charred the surrounding earth is baked and converted into a species of porcelanite. The combustion attending the production of the latter probably tends to a resolution of the carbonaceous matter into ultimate combinations, such as carbonic acid and water, and their total dissipation. Films of a pure asphalt resembling the solidified oil were observed lining the joints of porcelanite near Erin, but this was quite an exceptional circumstance and not to be considered as of general signification.

The localities where asphalt occurs are indicated on the general geological map. Many others may exist in the uncleared lands and are till now unknown. It will be observed they are principally contained in the Moruga series of strata, which is everywhere distinguished by carbonaceous and lignitic beds. In the Naparima marl, near San Fernando, the manifestation is rather that of a saturation of the strata with bituminous substances. The same derivation may be applicable in this case; but, as no beds charged with vegetable remains have been noticed, it is well to be guarded in forming hasty conclusions. A concentration of animal fossils (especially shells) sometimes occurs at the above locality; these are usually fragile, and have evidently undergone an abstraction of material. May they have partially contributed to the formation of the bitumen? A few deposits also exist north of the Guaracare. One of these exhibits the solid asphalt traversing the soil in irregular veins. The structure is somewhat granular, and the surface distinguished by eccentric rings and conchoidal markings, also described as characteristic of the Cuban chapapote. It is much purer than the ordinary bitumen, and is mistaken by the inhabitants for coal, from its very black color and peculiar structure. Under the blowpipe it ignites immediately, melts, and burns with a large, smoky flame. The conditions are manifestly different in this case to what were

previously described, but the late period of the season when this place was visited precluded any detailed investigation.

The principle deducible from the preceding statements is to the effect that one of the regular processes of the mineralization of vegetable matter consists in the production of substances of the bituminous series in distinction to those of the coal series. It would be highly unphilosophical to attempt to limit this operation to localities such as Trinidad, where such an origin may be clearly demonstrated, since the action of similar conditions will naturally produce identical results. The same application may consequently be applicable to the occurrence of asphalt, not in the tertiary formations only, but also in the secondary limestones and strata.

M. Parran* contends for an "époque asphaltique," distinguished by the distillation and condensation of bituminous substances.

This expression of epoch in the sense implied above, although convenient in geological speculation, is liable to conduct to premature generalization, unless employed with the utmost reserve and caution, and is further calculated to exercise a dangerous influence from its tendency to convey the impression of a partial or limited rather than an invariable operation of natural laws, whether in time or space. As to the distillation, though a favorite theory, it is deficient in those actual evidences which are very essential if a character approaching to certainty is to be conferred upon it. The circumstance of beds subjacent to asphaltic limestones or other strata being frequently entirely destitute of bituminous traces is a most forcible and fatal objection, notwithstanding the ingenious devices which have been proposed to account for it. Thus the author above mentioned has recourse to a variety of hypotheses; and, although the tertiary formation in which the bitumens exist is described as containing lignite and vegetable impressions, the origin of the former is ascribed to a supposed prolongation of the carboniferous formation beneath the subjacent crustaceous system.

The results arrived at in the consideration of this question depend entirely on the evidences of observation, as the multiplicity of the duties devolving upon the persons engaged in the geological survey of Trinidad has prevented them from attempting experimental investigation, which might have contributed to a clearer appreciation of the subject and invested the conclusions with a more positive and convincing effect.

CROSBY'S DESCRIPTION OF THE PITCH LAKE.

Another interesting description of the pitch lake is by W. O. Crosby, in the Scientific American of August 6, from which the following quotations are made. The print before me does not give the year, but I apprehend the article was written some years ago.

The topography of the country about the lake is extremely simple. From three sides—north, west, and south—the land slopes gradually upward from the sea to the surface of the lake, which lies 140 feet above the gulf, while on the east the land is slightly higher than the lake, which, therefore, differs from ordinary lakes in resting, not in a valley, but on a hilltop.

* * * * * * *

"It is fortunate," as one writer has remarked, "that the pitch, when compact, will not kindle, or, in other words, will not burn without a wick; for otherwise the entire region, including the village, might suffer the fate of Sodom and Gomorrah."

The pitch not only forms the seashore for nearly 4 miles, but in front of the village and perhaps 100 yards from the shore it rises from the sea as a solid barrier reef, which is often a source of danger to unwary boatmen. It is probable that the peninsula of La Brea owes its existence to the protection afforded the land by this reef of asphalt, which resists the action

* Gisement d'asphalte aux Environs d'Alais, Ann. des Mines, 5me série, tome iv.

of the water better than the unconsolidated clays and sands forming the coast to the north and south.

* * * * * * *

The pitch is quarried by excavating areas 30 or 40 feet square to a depth of from 2 to 4 feet. As soon as the work ceases on one of these excavations the asphalt begins to obliterate it, the walls not closing in perceptibly, but the bottom rising up, and in a few days no trace of the opening remains. This is one of many indications of greater fluidity below the surface. Toward the center of the lake are several detached areas, a rod or two in breadth, which are softer than the rest of the surface and yield under the feet, "so that on standing a few minutes one feels that he is gradually settling down, and in the course of ten or fifteen minutes he may find himself ankle deep." "But," as Mr. Manross truly said, "in no place is it possible to form these bowl-like depressions around the observer described by former travelers." Nor is it probable that Kingsley is right in saying: "No doubt there are spots where, if a man stayed long enough, he would be slowly and horribly engulfed." The inferior density of the human body would prevent its submergence even if the pitch were quite fluid.

In the vicinity of these places many small streams of gas escape from the pitch. The evil smell and the deposit of sulphur left on the pitch tell us that the gas is chiefly sulphureted hydrogen, but the sulphurous odor ceases to be perceptible at a distance of a few rods, and does not extend for 10 or 12 miles, as some writers have asserted.

The surface of the lake does not present a continuous sheet of asphalt, but is traversed by a network of channels, in which the rain water collects. These unite and divide most curiously, forming one connected system and dividing the pitch into numerous flat-topped or slightly convex areas of islands, which are usually of quite irregular outline, though sometimes nearly circular, and from 10 to 100 feet in diameter. A piece of marbled paper would give an excellent idea of the appearance of the lake. The sides of these channels are convex, presenting curves of great regularity and beauty, and where three or four channels meet a star-shaped depression is formed.

Several explanations of this peculiar structure of the lake have been proposed. Each of the many hundred areas into which the lake is divided possesses an independent revolving motion, in this wise: In the center of the area the pitch is constantly rising up en masse, displacing that which previously occupied the center, and forcing it toward its confines. Where the edge of such an expanding area meets that of an adjoining one the pitch rolls under, to be thrown up again in the center at some future period.

We find unique and conclusive evidence of this revolving process in "numerous pieces of wood, which, being involved in the pitch, are constantly coming to the surface. These fragments of wood are of the same recent origin as the leaves and twigs contained in the vesicles of the pitch. From the surrounding forests or the green islands of the lake itself they have found their way into the water channels, became water-logged, sunk to the bottom, and being drawn up again by the ever-revolving pitch." The true cause of the revolving motion of the pitch and of the structure resulting therefrom is apparantly the great diurnal range in the temperature of the surface of the lake. On uncloudy days the asphalt attains a temperature of about 140° F., and sinks during the night to 70° or 60°, suffering a variation of 70° to 80°, which must produce a considerable change of volume. This expansion is superficial, and its chief tendency is to extend the pitch horizontally. Where the pitch is covered by water it will not experience this alteration of volume, and these protected areas are forced downward by the expansion of the unprotected areas.

No soundings have ever been made in this lake, and its depth is unknown. The thickness of the deposit is, of course, a factor of the first importance in determining whether the supply of asphalt is likely to prove practically inexhaustible. In considering the question of the probable permanance of the supply, it is also important to remember that the material is doubtless still escaping from the underlying asphaltic sandstone, though, perhaps, very slowly.

As regards its origin, the lake is believed not to differ essentially from any of the patches of pitch scattered over the surrounding country. It appears to be simply a large puddle of pitch, which has oozed out of the sandstone and collected in a basin-like depression in that rock.

JOSEPH'S HISTORY OF THE PITCH LAKE.

A history of Trinidad by E. L. Joseph, published in 1837, contains the following description of the lake:

I now come to describe the asphaltum, or pitch, lake. On approaching the point called La Brea from the sea a strong bituminous odor is smelt at the distance of 2 leagues or more, and large black masses are perceived towards the shore; these appear like rocks at a distance, but are, in fact, bodies of asphaltum. As you near the point you perceive the land covered with dense and gigantic virgin forests, save in one place. This is the lagoon of pitch; its surface can scarcely be perceived from the gulf. The seaboard is fringed with the usual marine plants. No forest trees arise here, although at intervals clumps of very dark dwarf bushes are seen.

On landing a respectable-looking village presents itself. Here and there thick layers of asphaltum of several tons' weight overspread the surface of the soil, appearing as though they had been placed there by man, although, in fact, these layers have burst through the soil, which rests on immense strata of asphaltum. This substratum affects in an extraordinary manner many of the light buildings of the village. The posts that support these occasionally sink perpendicularly into the earth and asphaltum, but more generally the layers of pitch affect the posts so as to make them lean in an oblong direction, apparently endangering the buildings. This does not alarm the inhabitants of these dwellings, who, of course, build them of light materials, as often, when a house is on the point of falling in consequence of the posts leaning to the right, through some action of the substratum the posts not only resume their perpendicular, but gradually commence leaning in a contrary direction.*

Leaving this singular village, you take a wide and good road to the lagoon, which is situated about 5 furlongs from the village, at an elevation of 80 feet above the level of the sea. This road is flanked with very large cashew trees. To the right is an elevation, on which are many *conucos* (this is the South American term for a house and small cultivation). The soil of these *conucos* is half composed of particles of bituminous matter and is remarkably fertile. Dark-red and yellow pineapples are here produced of matchless quality. The pine of La Brea is a species distinct from the common *ananassa* of the West Indies.

Passing this elevation, you meet palm-thatched cottages (for the borders of the lagoon are inhabited); these are more powerfully acted upon by the mobility of the substratum of pitch on which the soil for a considerable distance round the lake lies. These huts appear more like card houses going to fall than human habitations; but the movement of the asphaltum is too gradual to cause accidents. These dwellings seldom or never fall, but, to use the expressions of their owners, regain their plumb.

At length you reach a place on which no hut can be erected; the whole lagoon is open. Before you a most extraordinary spectacle presents itself, which words can not describe and which the pencil has failed to delineate. This lake is about half a geographical league in circumference; it is surrounded on all sides by dark woods, save toward the sea; the surface seems perfectly black during the rainy season, but in dry weather it has a partial grayish hue; it appears as though billions of tons of pitch had boiled up from the earth from the effects of an immense subterranean fire which has been extinguished and left the asphaltum to cool in enormous bubbles.

Chasms between these black masses or bubbles extend in different directions all over the surface of the lake. You can scarcely walk 30 yards without having to cross one of them.

*I was told an action of trespass was brought before the magistrate of La Brea of a singular nature. The plaintiff alleged that the defendant's house bodily intruded on his (plaintiff's) land. I know not how this cause was decided.

These chasms are not abrupt, but gradually shelve off in an elliptical manner. The masses of asphaltum meet at the bottom. These apertures vary from 3 to 30 feet in width and are from 2 to 6 feet in depth. They are filled with water, which, although it has a slight bituminous taste, is wholesome. Small fresh-water mullets and little caymans (alligators) are caught therein.

Nearly all over the lake arise at intervals little islets (if I may be allowed the expression) of stunted trees. These, taking advantage of the slightest layers of soil, dart their hardy roots into the asphaltum and enjoy a precarious vegetable life, supporting myriads of parasites. These clumps of dwarf trees are by no means stationary. The imperceptible yet incessant movement of the asphaltum perpetually transports these vegetable islets from one part of the lake to another. Sometimes one of them sinks into the lower regions of asphaltum and is again thrown up at some distance, its dark, verdant hue changed to the blacker dye of the lagoon; it is encrusted with bitumen, and its vegetable juice changed to petroleum.

Thousands of beautiful butterflies and hundreds of more brilliant hummingbirds flock about these islets; above these flocks of gaudy paroquets and more beautiful mangrove cuckoos take their flight. The superb array of these birds and insects makes an extraordinary contrast to the Stygian lake below them.

The whole dark landscape appears unlike aught we have ever seen. The entire surface of the lagoon seems at rest. We behold no part of it in action, and yet we are convinced that the immense body of asphaltum of this black lake is incessantly in motion.

It is time now that I conduct my readers toward the more active part of the lagoon. In order to do this, we must approach the side nearest the sea. Here we encounter streams of petroleum, slowly but perceptibly flowing. Let us advance with caution. As we sink ankle deep at each step, we descend a little. Let us here pause; there would be danger in advancing further. Behold these fountains which supply all these rills of petroleum. No man may venture nearer. The strong bituminous and sulphurous odor which exhales from this region prevents even birds from flying over it; nothing alive dare approach nearer than we are. All before us is still as death.

The liquid part of the lagoon may be about 3½ acres, but I judge this by the eye; it can not be easily measured, and no two days has it the same extent and appearance.

I have found in different parts of this lake, but principally near the petroleum, large quantities of sulphur, but none of it in its pure state; it is all more or less mixed with bituminous matter. Near the great reservoir of tar I have picked up large grains of pure muriate of soda (common salt).

Those who live in the neighborhood of La Brea declare it conducive to health to bathe in the chasms of this lagoon. I have often tried these singular baths, and found or imagined them salutiferous.

During the wet season there is so much water in the hollows of the lagoon as to prevent its being seen to advantage; and in the dry season it is laborious and painful to explore it, on account of the insupportable heat of the asphaltum. The best time to visit it is in the height of the dry season at daybreak. Most of the chasms can then be leaped over by an active man. I would advise that a pair of worsted socks be worn over the ordinary stockings. These should be kept wet, but no shoes should be worn. By this means every part of the lagoon (save the part which is in a fluid state) may be traversed easily and without injury to health.

The influence of this lagoon on the surrounding space is astonishing. It mixes with and fertilizes the soil of the surrounding country 7 or 8 feet below its surface. If a well be dug within several miles round it, and water be not found within 10 feet, a thick layer of asphaltum is met with, through which an excavation must be made ere a spring is found. For a considerable distance off this coast the bed of the gulf is a stratum of asphaltum. Under the hill of Naparima, distant about 12 miles, a large mass of this mineral was discovered, which

has been exhausted in making the North Naparima road.* This was done by cutting it in small pieces and allowing the sun to melt it. It is the best substitute for macadamization yet discovered. On the plantations in the neighborhood of the lagoon are many of what are called pitch pots, *i. e.*, cones of asphaltum, that have apertures on their summit which send forth streams of petroleum.

Sir Walter Raleigh caused his vessels to be pitched with this mineral. He must have mixed it with a considerable quantity of oil or grease to make it serviceable for such a purpose.

Admiral Cochran conveyed to England two shiploads of the produce of La Brea, but, after a little examination, the substance was found to require too much oil in order to render it useful. The improved and improving state of chemistry may reverse this decision. Should any discovery be made which might render the asphaltum a fit article for ordinary use, as pitch and tar, Trinidad could easily supply the commerce of the world with it.

The late Sir Ralph Woodford made two experiments with the asphaltum. In the first place, he had it laid over the soil of a part of Brunswich Square, Port-of-Spain, in order to check the growth of the grass. This attempt was signally abortive; the asphaltum, mixing with the soil, added to its fertility, and, of course, made the grass vegetate luxuriantly. This failure, however, suggests its being used as manure. The second experiment was to obtain carbureted hydrogen gas in order to light a beacon on the tower of Trinity Church. It burnt well, but created such an intolerable smell that the experiment was obliged to be abandoned. The person who conducted this experiment, although industrious and intelligent, I believe knew little of chemistry.

There is no record of any volcanic eruption having taken place at this lagoon, yet I submit one must have happened. I have seen large masses of asphaltum of several tons' weight lying on the summits of pretty steep hills detached from and totally independent of the soil. It could answer no purpose of man to convey them there, and in this climate no men, neither civilized nor savage, would undergo the labor of conveying these masses to such a distance for no purpose. The only conclusion that I can arrive at is that these masses of asphaltum were thrown there by volcanic eruptions.

Up the Orinoco there is a similar lagoon, and another at Maricaibo; but, what is more germane to the matter, on the other side of the sea (in a direction west by north), at the mouth of the Guarapiche is another asphaltum lagoon corresponding with the one on this side of the gulf. These asphaltum lakes are pages in the book of nature which philosophers have not yet deciphered.

KINGSLEY'S DESCRIPTION OF THE LAKE.

The following description of the lake is from the work of Charles Kingsley ("A Christmas in the West Indies"), published in 1879:

As we went onward up the gentle slope (the rise is 138 feet in rather more than a mile), the ground became more and more full of pitch, and the vegetation poorer and more rushy, till it resembled, on the whole, that of an English fen.

* * * * * * *

The plateau of pitch now widened out, and the whole ground looked like an asphalt pavement, half overgrown with marsh-loving weeds, whose roots feed in the sloppy water which overlies the pitch. But as yet there was no sign of the lake. The incline, though gentle, shuts off the view of what is beyond. This last lip of the lake has surely overflowed, and is overflowing still, though very slowly. Its furrows all curve downward; and it is, in fact, as one of our party said, "a black glacier." The pitch, expanding under the burning sun of day, must needs expand most toward the line of least resistance, that is, downhill; and when it contracts again under the coolness of night it contracts, surely from the same cause, more downhill than it does uphill. And so each particle never returns to the spot whence it started, but rather drags the particles above it downward toward itself. At least so it

* Sir Louis Grant was in error when he told Mr. Montgomery Martin that the pitch which made this road came from La Brea.

seemed to us. Thus may be explained the common mistake which is noticed by Messrs. Wall and Sawkins* in their admirable description of the lake.

* * * * * * *

Passing these little islands, which are said (I know not how truly) to change their places and number, we came to the very fountains of Styx—to that part of the lake where the asphalt is still oozing up.

As the wind set toward us, we soon become aware of an evil smell—petroleum and sulpheted hydrogen at once—which gave some of us headache. The pitch here is yellow and white, with sulphur foam; so are the water channels; and out of both water and pitch innumerable bubbles of gas arise, loathsome to the smell. We became aware, also, that the pitch was soft under our feet. We left the impression of our boots, and if we had stood still awhile we should soon have been ankle deep. No douht there are spots where, if a man stayed long enough, he would be slowly and horribly engulfed. "But," as Mr. Manross says truly, "in no place is it possible to form these bowl-like depressions round the observer described by former travelers." What we did see is, that the fresh pitch oozes out at the lines of least resistance, namely, in the channels between the older and more hardened masses, usually at the upper ends of them, so that one may stand on pitch comparatively hard and put one's hand into pitch quite liquid, which is flowing softly out, like some ugly fungoid growth, such as may be seen in old wine cellars, into the water. One such pitch fungus had grown several yards in length in the three weeks between our first and second visits; and on another some of our party performed exactly the same feat as Mr. Manross—"In one of the star-shaped pools of water, some 5 feet deep, a column of pitch had been forced perpendicularly up from the bottom. On reaching the surface of the water it had formed a sort of center table, about 4 feet in diameter, but without touching the sides of the pool. The stem was about a foot in diameter. I leaped out on this table, and found that it not only sustained my weight, but that the elasticity of the stem enabled me to rock it from side to side. Pieces torn from the edges of this table sank readily, showing that it had been raised by pressure, and not by its buoyancy."

True, though strange, but stranger still did it seem to us, when we did at last what the negroes asked us and dipped our hands into the liquid pitch, to find that it did not soil the fingers. The old proverb, that one can not touch pitch without being defiled, happily does not stand true here or the place would be intolerably loathsome. It can be scraped up, molded into any shape you will, wound in a string (as was done by one of the midshipmen) round a stick, and carried off; but nothing is left on the hand save clean, gray mud and water. It may be kneaded for an hour before the mud be sufficiently driven out of it to make it sticky. This very abundance of earthy matter it is which, while it keeps the pitch from soiling, makes it far less valuable than it would be were it pure.

It is easy to understand whence this earthy matter (20 or 30 per cent) comes. Throughout the neighborhood the ground is full, to the depth of hundreds of feet, of coaly and asphaltic matter. Layers of sandstone or of shale containing this decayed vegetable alternate with layers which contain none. And if, as seems probable, the coaly matter is continually changing into asphalt and oil, and then working its way upward through every crack and pore to escape from the enormous pressure of the superincumbent soil, it must needs carry up with it innumerable particles of the soil through which it passes.

In five minutes we had seen, handled, and smelt enough to satisfy us with this very odd and very nasty vagary of tropic nature; and as we did not wish to become faint and ill between the sulphureted hydrogen and the blaze of the sun reflected off the hot, black pitch, we hurried on over the water furrows and through the sedge beds to the further shore—to find ourselves in a single step out of an inferno into a paradise.

PITCH AND WATER LEVELS.

Mr. N. F. Graham, who is in charge of the asphalt works at Pedernales, an island near the adjoining main, and has had large experience with pitch

* "Geological Survey of Trinidad," on asphaltic deposits.

deposits, believes that little volcanic tubes emitting gases may be found in groups at the bottom of the lake causing the pitch on the surface immediately above to assume the slightly elevated forms it does, causing the rain water to run off the elevated portions and remain between them. This opinion is based on his discoveries at Pedernales. He thinks, too, that the land pitch at La Brea is not without this peculiarity; that it is principally found in pits or volcanic holds in which it was originally elevated; and that between them the land is more or less filled with overflow pitch. Without expressing an opinion as to this theory, I beg to observe that, while most all the land pitch appears to be in land lower than the lake, large quantities of pitch are found in lots no lower than other lots (near by) where little or no pitch is found.

FOREIGN SUBSTANCES IN THE PITCH.

So far as I am aware, all the scientists agree that all the asphalt at La Brea and vicinity is of vegetable origin. I am informed that black mangrove vegetation is always found in the neighborhood of these pitch deposits, and it is thought that by distilling tar made from the heart of the black mangrove wood oil and asphalt similar to that found at La Brea may be produced. But the following comments of Wall and Sawkins on specimens of "asphaltum more or less mixed with woody matter" make no mention of mangrove:

A large number of specimens, not less interesting, remain to be examined, viz, asphaltum more or less mixed with woody matter. They are numbered 11, 12, 14, 15, 16, 24, 27, 28, 29, 30, 31, 33, 34 (thirteen specimens in all).

No. 11 brings before us a piece of asphaltum showing no very distinct outward sign of structure. After maceration in spirits of turpentine this is found, however, to consist of some very loose-textured woody matter covered and filled with asphaltum. It consists of short and wide parenchymatous cells (larger numbers the same) and thin-walled prosenchymatous cells. It would look like some wood of *Carica Papaya* (the papaw), if there were any vessels. It appears to have been a soft and loose-textured bark. This substance has not undergone any change such as is brought on by decay. There were no signs of any of the humic bodies, no signs of insects, of fungi, or other bodies usually accompanying decay in moist air. It appears to me that this woody matter was only impregnated with pitch, without being decayed or otherwise decomposed or altered previously.

No. 12 is less shiny than the last, and contains a large proportion of woody matters; this is rotten wood impregnated with pitch. There are woody fibers, the walls of cells and vessels, all in a state of decay. It must have been wood decomposing in moist air before it was impregnated with the asphaltic matters, which is proved by the existence of numerous fibers of some fungus.

No. 14 is much like the last, but the traces of organic life generally accompanying decay in woody matter are still more numerous. We have here eggs and excrements of insects or worms and numerous fibers of fungi. The woody matter must have come from dicotyledons, and perhaps from ferns of smaller kinds. A part of this specimen looks again like the sediment of some swamp in or near a savanna, but impregnated with or changed partly into asphaltum.

Nos. 15 and 16 have woody matter impregnated with pitch, much like No. 12. There are traces of animals and fungi, as observed before. Nearly all the medullary rays were destroyed, and there are holes in the substance longitudinally as well as transversely. The remaining tissue appears to me to belong to the family of *Cycadeæ*, as it shows much of the

dotted appearance characteristic of that family. The circumstance that these plants have much starch in parts of their tissues accounts satisfactorily for their being perforated in all directions by animals.

No. 24 is a very remarkable specimen. It is a piece of wood intermixed with large layers of asphaltum. On a superficial examination it became already evident that the wood had been largely changed, and that the asphaltum had taken its place. In this specimen the marks of decay, accompanied by insects and vegetable productions, are no more perceived; the transformation has been here of a thoroughly different kind and character. It affords us the opportunity of examining the hypothesis of the direct transformation of wood into asphaltum. The cells are corroded, as if acted upon by some dissolvent. The specimen was treated with oil of turpentine, then with Schulz's liquid, washed, and treated with ammonia. This dissolved again, as in the case of lignites, a large proportion of a brown substance. The remainder, being washed, treated with sulphuric acid and iodine, was found also to be unaltered cellulose.

No. 27 is a kind of asphaltum, having little of woody matter included, being a good specimen of glance pitch.

No 28 is much like No. 12.

No. 29 is partly pitch mixed with earthy matter, partly wood in a very advanced stage of transformation into pitch. It contains also matters of a more waxy nature, with some impressions of leaves and rootlets. The piece appears to be impregnated with sulphate of iron and alumina.

No. 30 is the same as No. 24, only here we have a large admixture of sand and other earthy matters. This piece shows beautifully the cells in their various corroded and half-dissolved state, while the remainder is partly of the nature of lignite, partly untouched cellulose. The earthy matter contains a curious assemblage of organic substances. There are oval and globular bodies resembling eggs of small animals and species of cryptogamic plants, perhaps pollen.

No. 31 is asphaltum mixed with earthy matter in the shape of small globules.

Nos. 33 and 34 are comparatively pure specimens of so-called glance pitch. They have only a small admixture of woody matter, epidermic tissues and others apparently accidentally mixed with it.

In nearly all these specimens, or at least where there is a strong probability of their representing wood in an actual state of transformation into asphaltum, an evident parallelism exists with lignite. They are reacted upon after the removal of the bitumen exactly in the same manner by Schulz's mixture and ammonia. As the chemical process which transforms wood into asphaltum must be very similar to that which changes it to lignite or coal, we conclude, not too rashly, I think, in considering them to be in the transitory state. We have also among our specimens such as are evidently in a state of conversion into lignite. As yet the difference in the process can not be pointed out, and we must content ourselves with showing the analogies, being persuaded that the specimens examined possess in every way the character of a tropical vegetation. I can not omit, however, to point out that the complete absence of arboreous monocotyledons, such as palms, is very extraordinary and anomalous. At the same time, a great uniformity pervades these fossils, and I do not know if I must again throw out the supposition that the whole of these remains belonged to a coast vegetation. The deposits of swampy ground which we have examined support this view.

In concluding, I must express my regret that I have not been able to identify more of the specimens with living plants or their parts. A little more might have been done in a place where access to museums and scientific libraries can be had and comparisons instituted with what has been written and collected on the same subject. The complete absence of scientific literature in our public library, where there is hardly a book to be seen beyond the most elementary in these matters, is, on such occasions, severely felt. Had efficient apparatus for pursuing investigations been obtainable, many of the specimens, especially the silicified woods, might have been more completely examined.

The thirteen specimens above commented on appear in a list which follows the comments.

Table showing the foreign substances in the thirteen specimens.

No.	Nature of specimens.	Appearance previous to examination.	Mode of occurrence.	Locality.
11	Asphaltic wood.....	The external form that of wood, the internal structure obliterated by (converted into?) asphaltum.	Existing isolated in sandy or shaly strata.	Guapo.
12	.....do.....	.....do.....	.....do.....	Do.
14	.....do.....	Outer form of wood, interior asphaltum, with some remains of fibrous structure.	.....do.....	Do.
15	.....do.....	All traces of organic texture obliterated.	.....do.....	La Brea.
16	.....do.....	Much fibrous structure, with a species of liquid asphaltum between the fibers, which exudes on pressure.	.....do.....	Guapo.
24	.....do.....	Part of the structure is perfect, but sometimes entirely replaced by an asphaltic deposit parallel to the fibers.	Isolated in slightly bituminous sand.	La Brea.
27	.....do.....	No trace of interior organic structure.	In shale.....	Do.
28	.....do.....	The ordinary aspect of external form preserved and internal structure obliterated.	Sands or shales.....	La Brea or Guapo.
29	Asphaltic wood and asphaltum.	Shows what is probably the junction of asphaltum and wood undergoing transformation.	From carbonaceous shale containing remains of plants and asphaltum.	La Brea.
30	Asphaltic wood.....	.....	Carbonaceous shale.....	Do.
31	Asphaltum.....	Containing small globular concretions; no appearance of vegetable tissue.	Part of a mass of asphaltum, which may have been formed by conversion from strata rich in vegetable débris.	Do.
33	Glance pitch.....	Brilliant luster; no trace of organic texture.	In bituminous sand.....	Do.
34	.....do.....	.....do.....	Thrown on the beach after a rough sea.	Do.

It will have been observed that Wall and Sawkins give but one classification to the lake pitch and the land pitch adjoining, designating both as "ordinary asphaltum." I have no reason to doubt the correctness of this classification from my own observations. In color the ordinary pitch is substantially the same, but this does not include a glossy, tarry substance hereinafter mentioned, and otherwise it has only three distinct outward appearances, indicated respectively by the local names "liquid pitch," "iron pitch," and "cheese pitch," the cheese pitch of the land being firmer and stiffer (the more so, it seems, the further from the lake it is found) than the cheese pitch of the lake. I have heard here of a third kind of La Brea land pitch called "steel pitch," but while at La Brea I saw no pitch by that name, though I inquired for it; and I apprehend it would only be by close examination that a difference could be found between iron pitch and steel pitch, if this latter exists, or else it is not found in excavations of the usual depth.

There are two other substances found at La Brea, to which allusion is made in the above quotations from Wall and Sawkins. I should say, however, that these are of no importance either for good or bad. They both seem to have been the result of fire. The popular idea here seems to be that there must have been one or more fires fed by logs and underbrush on the surface of the ground where these substances are presumed to have been.

One of these substances looks like coke or burnt cinders, and the other like clay burnt to a crisp. The former is dull and lifeless in appearance, and the other is a red-yellowish substance, which may be crumbled with the fingers.

The coke-like substance is in such small quantities that it seems to me to be impossible for it to affect any shipment of asphalt, even though all of it be dug and shipped. I doubt if there is more than 1 pound of it to 100 pounds of asphalt; as to the other burnt substance, no shipper would ever think of mixing it with his shipments of asphalt, because it is of an entirely different color and a different substance, whatever it might originally have been, and its presence in a shipment of asphalt to any material extent would not fail to attract the attention of the most casual observers.

Out of thousands of tons of land asphalt I saw on the shore at La Brea awaiting shipment I did not notice one particle of this burnt clay-like substance, and only saw here and there a small piece of the coke-like substance, and the owner of one of the piles of pitch told me that these few pieces would be thrown out on final shipment. In this pile of 1,600 tons those present when I examined it estimated that there was not more than half a ton of this coke-like substance and from 2 to 5 tons of iron pitch.

Another substance, which appears to be unusual, attracted my attention—a black, filthy, sticky-looking stuff. I am told that the presence of this stuff—something like blue clay, only darker and more rotten looking—strongly indicates that the bottom of the pitch has been reached. The custom is to stop digging downward when the diggers come across this substance. I have deemed it proper to mention these foreign substances as being all I noticed, except ordinary dirt, because of a belief that seems to exist in the United States that an undue amount of foreign matter is shipped with the land pitch.

The color of the cheese pitch of the lake and of the land is substantially the same. I placed two carts side by side, one containing lake pitch and the other land pitch, and the difference was slight. The lake pitch was somewhat brighter than the other, and possibly of a more volatile appearance. But I think the simple fact that the cheese-like cells are fresher looking than the part between the cells, the cells of the lake pitch being larger and more globular than those of the land pitch, accounts for this difference. I obtained a sample of the lake pitch which had been dumped at the seashore for several months, and its cells were as much compressed and its general appearance no brighter than samples I obtained from the land pitch. I am only speaking in general. Some samples of the land pitch may be a shade fresher and richer looking than some samples from the lake, but, as a

general rule, the reverse is the case. While, in a general way, all the cheese pitch is of the same color, yet an experienced eye would have no difficulty in seeing shades of difference both within and without the lake, owing largely, if not altogether, to the dirt which is found on the surface of the lake to some extent, and to a greater extent, of course, on the surface outside the lake. Of the two, there is probably greater uniformity of color in the cheese pitch of the lake.

In outward color, to an inexperienced eye, there is little or no difference between iron and cheese pitch; but one is very hard and the other soft, and they are not unfrequently glued together. In getting out the cheese pitch for exportation the pick and cutlass are used to clean it of iron pitch and other substances that may adhere to it. I understand that the iron pitch has little or no volubility; but, if this is so, the preponderating cheese pitch in refilling the excavations carries more or less iron pitch with it, as both qualities are found in the refilled excavations.

The rapidity with which an excavation fills up depends upon the location. Where the earth is greatly in excess of the pitch the filling-up process would, of course, be less pronounced, and where very little or no pitch is found the excavation would probably never fill up. But in a rich deposit of land asphalt an excavation yielding 3,000 tons would fill up to a substantial level with the surrounding pitch within a few months. I was assured by Mr. Reid, a credible gentleman of this place (whose statement was based upon the report of his agent), that an excavation about 50 by 50 feet, about 300 yards from the lake, from which he obtained several thousand tons of pitch, and not more than one ton of dirt—the most of which dirt was at the surface—in January and February last, is now completely filled up. A few days after he told me this I visited La Brea and examined the spot and talked with one or two persons having knowledge of the facts, and I am fully satisfied of the substantial correctness of Mr. Reid's statement. I was told on the spot that the excavation had been dug 14 feet deep, and that out of thousands of tons of pitch not half a ton of iron pitch was obtained. I presume this estimate of the iron pitch was only in an offhand way, but I am satisfied there could not have been more than a few tons of it at most. It is proper to observe, in this connection, that the pitch had not come to a level as it does in the lake, but presented a very uneven surface—more like a bed of huge rocks—which, if leveled, would, I judge, have been approximately on a level with the surface of the surrounding pitch. It seemed, from what was told me and from what I saw, that the surface dirt over the 3,000 tons excavated did not average more than 6 inches or a foot in thickness. On a lot close by, worked by Mr. George Deffentaller, I was assured that a pit 12 feet deep had been dug about six weeks before, and it had approximately filled up in a similar way. What was told me by Mr. Deffentaller and by J. Durham and G. Simon, who dug the excavation, and two or three other persons satisfies me of the substantial accuracy of the statement. I judge this refilling would have been nearly up to a level with the surrounding pitch if all the bowlders had been leveled down. I noticed one place in Deffen-

taller's lot which was rather exceptional, presenting an appearance more like the refillings in the lake. It was a place about 10 steps long and 3 or 4 wide which had swelled up, as it were—like bakers' dough—in a slightly convex form and as smooth as the lake pitch. I stepped on it, and it yielded to the heel of my shoe.

Mr. Gray and Mr. E. L. McCarthy, both of whom are employed by the Trinidad Asphalt Company or its agent, and in whose judgment I place confidence, favored me with a written statement to the effect that an excavation 4 feet deep and 8 feet square in the lake near the "place of supply" would fill up in less than two days; but, if taken from a place where the lake was of average hardness, it would take five or six days before the excavation would be entirely "obliterated," though it would substantially fill up in less time. They also stated that an excavation of the same dimensions (4 by 8 feet) at Reid's place (one-fourth of a mile from the lake) ought to substantially fill up in about six weeks.

It should be borne in mind that at other places the refilling is not so rapid. I saw a place on the same road, a short distance below Reid's place, where a deep excavation had been dug and considerable pitch obtained two or three months ago, and pitch had filled in the excavation to a very much less extent.

On the village road, near Deffentaller's works, I saw where about one-fourth of an acre had been cleared off, but no pitch dug. All the surface dirt, which was estimated to have averaged about a foot in depth, had been removed, leaving what appeared to be a solid body of pitch. The surface was more or less uneven—some of the "bowlders" being probably 2 or 3 feet high. There were several persons of the neighborhood with me, and they estimated that an excavation at this place would not yield more than 1 ton of iron to 100 tons of cheese pitch; and they also expressed the opinion that the same condition existed from that point up to the lake, embracing a stretch of land, say, 300 by 100 or more yards.

As to the depth of the pitch in this stretch of land, no one seemed to know. I apprehend that none of the excavations had gone to the bottom of the pitch.

Making due allowance for the offhanded character of the estimate given me and guided by my own observations, I think the following estimate of the several substances of this stretch of land may be put down as follows:

	Per cent.
Cheese pitch	95
Iron pitch	3
Coke-like substance	0½
Earth	1½

But even within this choice stretch there might be places where little or no pitch would be found. In this stretch I saw no signs of the burnt clay referred to hereinbefore, and I was told there was none. But there is another substance that is worthy of mention, on account of its character, though its amount, so far as visible, is insignificant. At Hadley's works,

within 50 yards of the lake, a soft substance like tar oozes out of a bank of pitch. There is no bubbling water, as there is near the center of the lake, for it comes out of an embankment. It oozes out imperceptibly and flows down the bank like so much tar. I have a specimen of this substance and also of the "liquid" lake pitch now before me, which I obtained at their respective places of deposit. Both are sticky, but the "liquid" lake pitch is more grainy and has a more pronounced odor. The other is very much brighter than any Trinidad pitch I have seen, except the hard glance pitch, to which it almost exactly corresponds in point of brightness and color.

THE LAKE.

I beg to observe, in this connection, that, between the place worked by Mr. Hadley and a point clearly within the border of the lake, there is nothing in the topography that I could see to show the exact border of the lake. The first time I approached the lake from Hadley's works, one of the party, a resident of the neighborhood, said "the lake begins about here." This seemed quite probable from the general outline of the lake and the slope behind us, and I am satisfied the survey lines were "about here." While the color of the surface of the lake grows duller and less lifelike from the center (the "place of supply," I should say) outward, this change seemed no more pronounced at the spot in question than within the limits of the lake. I examined the spot in company with Mr. George Deffentaller, Mr. C. Maximie, and others, all of whom resided in the neighborhood, and not one could point out any boundary defined by nature. But the boundary of the pitch lake seems to be a puzzle even to experts. As observed before, Wall and Sawkins put the surface of the lake at 99 acres; subsequently the Government (acting, I presume, on Mr. d'Abadie's survey) rented out over 112 acres and had 5 acres to spare. Mr. Kernahan's survey (1886) puts the surface of the lake at 109 acres 9 perches.

THE ASPHALTUM PHENOMENON.

The economical capabilities of Trinidad asphalt are commented on by Wall and Sawkins as follows:

ASPHALTUM.

The occurrence of this substance, at least to the extent and in the forms assumed in Trinidad, is a natural phenomenon of some interest, and has necessarily received special attention during the examination of the island.

* * * * * * *

During the last half century numerous efforts have been made to find applications for the local bitumen, and especially by Lord Dundonald. Many of these will probably be eventually successful, but various difficulties have hitherto prevented the majority from coming into operation.

While the bitumens of some countries, such as the asphaltic oil of Ava and Pegu, are stated to contain abundance of paraffin, the asphaltum of Trinidad, on the contrary, does not yield that valuable substance.* A number of oils with various adaptations can, however, be

*According to the researches of chemists in the United States.

extracted from it, and this seems at present the most advantageous purpose to which it can be devoted. An American company has already established works at La Brea for the manufacture of lamp and lubricating oil. The former is extensively used in the colony, and appears to afford satisfaction, since it gives a rather intense light combined with great economy of the fluid. The lubricating variety is exported to the United States, where it is believed to be well appreciated. The manufactory of this company, not yet fully established, has produced during a portion of this year (1858) several thousand gallons of the oils.*

Another set of works has been erected for a French company, with the object of concentrating the asphalt by evaporating the water always contained in the substance, after which it occupies a much smaller space, and the freight is, of course, less. This is termed "boiled pitch," the specific gravity of which is 1.439, and that of the ordinary (including about 25 per cent of earthy matter), 1.298. The proportion of water removed amounts in the above case to 32.12 per cent. The material, after treatment, is sent to France, where it is applied principally in the formation of asphaltic pavements. The machinery employed in this process at La Brea is ingenious,† but the establishment of the undertaking is too recent to ascertain what amount of success is likely to attend it.

The applications in the colony have been principally for flooring and paving, but only to a small extent.

An advantageous employment would probably be in the production of gas, which is much required in Port-of-Spain and San Fernando.

The quantities shipped were:

Year.	Raw.	Boiled.	Total.
	Tons.	*Tons.*	*Tons.*
1857	1,650	150	1,800
1858 (11 months)	3,100	200	3,300

It must not be supposed from these figures that there is a rapidly increasing consumption of the article, as the demand is very irregular, and the quantities exported are influenced by the commanders of ships, who, finding no other cargo, take this at a low freight or on their own risk.

There is no market for the article in England, and it consequently goes to the United States and France, especially to the latter, where it is understood to be extensively employed for asphaltic pavements and as a mastic.‡

The price in Havre is from 50 to 60 francs per ton for the raw and 150 francs per ton for the boiled. The cost, placed on board the ship at La Brea, is $2.50 (12½ francs) per ton.

Asphaltum glance is a much purer variety, which, dissolved in oil of turpentine, is employed as a varnish; it has been found in sufficient quantities for exportation, and some of it of such quality as to realize over £20 per ton.

The source from which the material for shipping has been hitherto derived is the deposit or collection existing at La Brea Point. This is in process of exhaustion, and recourse must eventually (and before long, if the present rate of extraction continues) be had to the lake.

*Since the above was written it is rumored that, in consequence of the difficulties attending manufacture in this country, the operations are likely to be suspended.

†It is said not to answer the expectations.

‡Dr. Ure says the asphaltic pavements in France are much superior to those constructed in England, which he attributes to the employment of natural bitumens, such as the asphaltic limestones, in the former country, while coal tar is generally used in the latter. He speaks very encouragingly of the applicability of natural bitumens to numerous useful purposes and evidently regards them as of much greater value in construction than the analagous artificial productions. (Dictionary of Arts.)

The term "inexhaustible," applied to the latter, has probably arisen from the circumstance of artificial cavities rapidly closing up, which may have led to the supposition of the substance being reproduced or generated as fast as removed; but it is essential to remember that every pound abstracted diminishes the remaining quantity by that amount.

One foot of depth contains for the whole area 158,400 tons. The real depth is probably very unequal; but if the average is assumed at 20 feet, the total deposit consists of 3,168,000 tons; if at 30 feet, of 4,752,000 tons. The latter is the maximum amount which can be expected to exist, a quantity which, should an exhaustive demand for the material arise, is by no means inexhaustible.*

The smaller masses of asphaltum occurring along the seashore or in the woods are usually mixed with a large proportion of earthy matter, and are consequently too impure to be serviceable; a small quantity may, however, be eventually obtainable from this source. The localities where liquid bitumens are exuding may also furnish some material.

A list of the patents for the application of asphaltum secured in Trinidad, and also some other propositions for its employment, is needed.

Patents and ordinances secured in Trinidad for the application of asphaltum.

Patentee.	Application.
A. A. L. Chocrane, captain in the royal navy.	Improvements in manufacturing artificial fuel.
Hiram Hyde	Improvements in the manufacture of mineral oils.
Frederick J. Swift	Improvements in the apparatus for manufacturing oil from asphaltum.
Hamilton Warner	Improvements in the manufacture of mineral charcoal.

There have been several patents taken out in England for the application of the Trinidad ınens.

In a pamphlet,† entitled "Brief Extracts from the Memoranda of the Earl of Dundonald the Use, Properties, and Products of the Bitumen and Petroleum of Trinidad," the follow-g propositions for its utilization are contained:

(1) As a cement in the construction of piers, moles, breakwaters, sea walls, and shore defenses.

(2) As bituminous concrete in the foundations of lighthouses, bridges, and other hydraulic works.

(3) As a flexible, adhesive, bituminous compound for forming the joints of earthenware pipes.

(4) As a covering for galvanic wires.

(5) As pipes for the conveyance and distribution of water.

(6) As a perservative from rust and decay.

(7) For coating water channels in porous strata.

ANALYSIS OF ASPHALTUM.

The following report and certificate of analysis from Prof. P. Carmody, the Government analyst of the colony, in respect to both lake and land asphalt is worthy of consideration. It is proper to observe that the specimens he analyzed were exclusively of the cheese pitch.

*The enormous consumption which substances useful in the arts has attained is shown by the circumstance of the production of coal, which now amounts to over 65,000,000 tons per annum in the United Kingdom alone.

†Ridgway, London, 1857.

CERTIFICATE OF ANALYSIS.

I hereby certify that the samples of asphalt taken in my presence on the 16th ultimo from the lake and district of La Brea have been analyzed by me, with the following results:

Sample.	Water.	Ash.				Loss on ignition, bitumen, etc.	Composition of dry asphalt.		
		Soluble in water.	Soluble in acid.	Insoluble.	Total.		Ash.	Loss on ignition.	
								Bitumen.	Other than bitumen.
	Per cent.	*Per cent.*	*Per cent.*	*Per cent.*	*Per cent.*	*Per cent.*	*Per cent.*	*Per cent.*	*Per cent.*
1.....	21.4	0.98	4.44	24.26	29.68	48.92	37.76	53.46	8.78
2.....	27.38	.9	4.04	22.44	27.38	45.24	37.7	55.42	6.88
3.....	26.46	.78	4.04	22.88	27.7	45.84	37.66	53.78	8.56
4.....	26.46	(*)	(*)	(*)	27.76	45.78	37.75	51.46	10.79
5.....	29.9	.48	4.7	21.5	26.68	43.42	38.06	51.36	10.58
6.....	26.42	(*)	(*)	(*)	29.4	44.18	39.96	53.07	6.97
7.....	26.36	.62	3.84	23.7	28.16	45.48	38.24	52.11	9.65

*Not determined.

Samples Nos. 1 and 2 were taken from different parts of the lake; the remaining samples were taken from deposits now being worked outside the lake. No. 1 is taken from the center of the lake, and is a soft pitch, locally termed "liquid pitch." No. 2 is the ordinary hard pitch of the lake.

Report appended.

P. CARMODY, F. I. C., F. C. S.,
Government Analyst and Professor of Chemistry to the Royal and St. Mary's Colleges.

GOVERNMENT LABORATORY,
Port-of-Spain, Trinidad, May 4, 1892.

REPORT ON VARIOUS SAMPLES OF ASPHALT TAKEN AT LA BREA.

I specially visited La Brea on the 16th ultimo at the request of E. W. Packard, esq., for the purpose of having the samples referred to in the accompanying certificate of analysis taken in my presence and satisfying myself of their authenticity. Nos. 1 and 2 were taken from two different parts of the lake. Of the remaining samples, some were taken from deposits now being worked near the lake, some from deposits near the sea, and some from deposits between these extreme points; so that the above series of samples may be fairly regarded as representative of the whole of the present working deposits in the district.

From the accompanying results of analysis it will be seen that the samples are so similar in composition that for all practical purposes they may be considered identical in quality, suitable for the manufacture of paving material.

The composition of the ash shows that all these samples have had a common origin, for the presence of mineral matter in these asphalts can not under any circumstances be regarded as adventitious, since it is thoroughly incorporated with the bitumen in the same proportion and has the same percentage of composition, as regards the relative proportions of matter soluble in water in acids and insoluble substances, whether the samples be taken from the softest part of the lake itself or from any of the present sources of La Brea asphalt. From a personal knowledge of the local circumstance, the elevated position of the lake itself, and the comparatively lower levels of the other adjacent deposits, and from a careful study of the natural movement of pitch, I am of opinion that the pitch found in the beds outside the lake

has been divided from the lake itself by the subterranean flow of the pitch in the viscous condition, a condition which it rarely assumes under the combined influences of heat and pressure.

P. CARMODY, F. I. C., F. C. S.

GOVERNMENT LABORATORY,
Port-of-Spain, Trinidad, May 4, 1892.

VENEZUELAN ASPHALT.

There are large deposits of asphalt being worked at Pedernales and also in the State of Bermudez, Venezuela. The former is in charge of Mr. N. F. Graham, representing a Caracas company, the latter in charge of Mr. A. H. Carner, representing a New York company. Both of these gentlemen are American citizens, and Port-of-Spain is made the base of their operations. At my request they favored me with the following statements:

STATEMENT OF MR. GRAHAM—PEDERNALES ASPHALT.

PORT-OF-SPAIN, *May 7, 1892.*

Hon. W. P. PIERCE,
United States Consul, Port-of-Spain.

SIR: In reply to your questions, I will state that the pitch lake of Trinidad can be exhausted in time. Since the year 1884 to the present date the level of the lake has lowered in the center about 3 feet. I do not say that this is altogether due to digging out the pitch from the lake itself, but also from its surrounding parts as well. As the pitch is dug out from around the outside of the lake the center gradually settles. The parts excavated fill up, not from the bottom of the excavation, but from the sides. The pitch is constantly in motion, and will stop nowhere until it gets its level.

My opinion, as regards the pitch lake proper and the pitch on the outside, called the "overflow," is that there is practically no difference between them. The center of the lake contains more volatile matter, which is not essential for road making, as all the light, volatile matter has to be evaporated before it can be used for this purpose. The difference with the outside pitch lies in its having been exposed more to the sun and all the light oils have evaporated, water taking their place, consequently it is harder than the pitch in the center of the lake. The virtue of the asphalt on the outside (by outside I mean both the outer parts of what is commonly called the "lake" and the pitch adjoining, commonly called "land pitch") is not destroyed in anyway.

My opinion as regards the "overflow" pitch is that there has been a series of small volcanoes, or what are generally known as "pitch holes," in action that have covered the surface with pitch, and have gradually closed up with the heavier flow from the center; hence the cause of the soft pitch being mixed up with the hard pitch on the outside, there being, in my opinion, two kinds of "land pitch," aside from the small quantity of what is called iron pitch.

In comparing the Trinidad and Venezuelan pitch, I find no difference between what is called "liquid lake pitch" and the Venezuelan pitch. The Trinidad deposit is much older than that of Venezuela. I do not think, as many persons here state, that the source of the Trinidad pitch is in Venezuela. I think that there is no connection whatever between the one pitch deposit and the other.

The pitch in Venezuela varies very much in hardness and in quality, but not more so than that of the pitch lake in Trinidad. There are vast deposits in Venezuela. In Pedernales there are vast deposits, and also in the State of Bermudez; the latter are now being worked by the New York and Bermudez Company. The pitch worked by the New York

and Bermudez Company, and also the Pedernales pitch, is of superior quality to that of Trinidad. There are also many small deposits of pitch in the island of Trinidad. Chemically there is no difference; if anything, the pitch at Guapo and other places in Trinidad is richer in bitumen than the La Brea pitch.

The asphalt deposits worked by the Compañia Anónima Minas de Pedernales are extensive, and are on the island of Pedernales, to the southwest of Trinidad and about 16 miles therefrom. The asphalt mine is situated near the mouth of the Pedernales River. The river at the place where the mine is located is a mile and a half wide, having a depth of water on the bar of 16 feet at low tide and 21 feet at high tide. The channel is about a mile wide. We have works for refining the asphalt on the spot, and do not ship crude. We also have a wharf at which any size of vessel can go alongside and load; also a tramway that runs from the wharf to the works, which are away from it about 400 yards; also tramways on all parts of the lake which are being worked.

The following is a letter I received from Mr. A. Urich, PH. D.:

"TRINIDAD, *September 8, 1887.*

"N. F. GRAHAM, Esq.

"DEAR SIR: The sample of boiled pitch you sent me for analysis contains—

	"Per cent.
"Hydrocarbon (soluble in benzole)	94.55
"Moisture, loss at 212° F.	3.15
"Mineral matter	2.14

"The pitch is exceptionally rich in hydrocarbons, and contains but very little foreign matter.

"Yours, most truly,

"A. URICH, PH. D."

Subsequent to the date of the foregoing letter Dr. A. Urich was acting as Government analyst of Trinidad, and while acting as such he gave me an exhaustive report or analysis of the asphalt and oils of Pedernales, which, I am sorry to say, I am unable to hand you to day, as it is at the head office of the company at Caracas.

I have, etc.,

N. F. GRAHAM,
Superintendent of the Compañia Anónima Minas de Pedernales, Venezuela.

STATEMENT OF MR. CARNER—BERMUDEZ ASPHALT.

PORT-OF-SPAIN, TRINIDAD, W. I., *May 24, 1892.*

Hon. WILLIAM P. PIERCE,
Consul of the United States at Trinidad, W. I.

DEAR SIR: In reply to your inquiry in reference to asphalts of Trinidad in particular, and of the immediate vicinity in general, and also to you kind offer to allow me to contribute my "mite" of knowledge upon the subject, I beg to state that for obvious reasons I feel constrained to refrain from offering personally any comments in particular with reference to the merits or demerits of Trinidad asphalt, or, as it has become recently distinguished, Trinidad "lake" asphalt, but prefer to offer, as being of much greater value for your purposes, some extracts from a statement upon this subject recently published by Prof. E. J. De Smedt, who, it is stated, is the original inventor of the asphalt pavements as now laid in the United States, and who was for nine years the chemist and official inspector of asphalt pavements and hydraulic cements at Washington, D. C.

The fame of Prof. De Smedt upon the subject of asphalts is sufficiently well known both in the United States and Europe to need no further comment from me. He says, in a com-

parative test for quality and purity of Trinidad lake asphalt and Bermudez asphalt (regarding the latter of which I will refer to more particularly later on), as follows:

"An analysis of best Trinidad lake refined asphalt by Clifford Richardson is as follows:

	"Per cent.
"Bitumen soluble in CS_2	55.6
"Organic and inorganic matter (impurities)	44.4
"Total	100

"At 400° F. it gives no flash.

"Analysis of Bermudez refined asphalt by E. J. De Smedt is as follows:

	"Per cent.
"Bitumen soluble in CS_2	97.86
"Organic and inorganic matter (impurities)	2.14
"Total	100

"At 400° F. it gives no flash."

In regard to softening points, the two varieties are again compared at the respective degrees of temperature as indicated:

Description.	Trinidad lake.	Bermudez.
At 60° F.	Hard and brittle.	Compressible.
At 75° F.	Can be slightly bent.	Viscous and malleable.
At 100° F.	Does not flow, but is easily bent.	Flowing, and can be stretched in hair-like threads.
At 189° F.	Flowing point.	Melted.

In connection with this he adds that, "everything else being equal, the lower softening points of an asphalt increases its quality proportionately. This is admitted by the chemist and inspector of asphalts and cements of the city of Washington, D. C., in his annual report of 1891, and it is also generally admitted by all experts and chemists who have made a study of asphalts for paving purposes."

With reference to the oiling or manufacturing of asphaltic cement, he makes the following statement:

"According to the annual report of the inspector of asphalts and cements of Washington, D. C., 14.71 pounds of oil are added to each 100 pounds of crude Trinidad lake asphalt. This 100 pounds of crude Trinidad lake asphalt yields a maximum of 40 pounds of pure bitumen; consequently 26.88 per cent of oil is added to the pure bitumen."

With the Bermudez asphalt, "15 pounds of residuum oil, 20° Baumé, at 60° F. is added to each 100 pounds of refined, and this 100 pounds of refined asphalt yields 97.86 pounds of pure bitumen; consequently only 13.3 per cent of oil is added to the pure bitumen." This is manifestly an advantage to the consumer, for Prof. De Smedt goes on to say: "I agree with the inspector of asphalts and cements of Washington, D. C., in the statement in his annual report 'that an increase of residuum oil is undesirable,' and I will add that it is detrimental, as the quality of an asphalt is reduced in the ratio of the percentage of increase of oil used."

In continuing his comparative tests of the two varieties in question to the practical point of pavements, Prof. De Smedt arrives at the following results:

"Analyses show that when 15 per cent of Trinidad lake asphalt cement has been employed only 10 per cent is found. This is a proof that one-third of it is impurities and is actually a waste product." And, on the other hand, "analyses show that when 10 per cent of Bermudez asphalt cement has been employed, 10 per cent is found. This is a proof of its purity. One square yard of pavement 2½ inches thick weighs 250 pounds. Fifteen per cent Trinidad lake asphaltic cement equals 37½ pounds per square yard of pavement; it will thus be seen that only 53⅓ square yards of pavement 2½ inches thick are manufactured

from 1 ton of Trinidad lake asphaltic cement. Ten per cent Bermudez asphaltic cement equals 25 pounds per square yard of pavement; it will thus be seen that 80 square yards of pavement 2½ inches thick are manufactured from 1 ton of Bermudez asphaltic cement."

So much has already been written and published in reference to the asphalt deposits of Trinidad that I believe any further remarks upon the subject from me would be entirely superfluous; but, after the foregoing statements, it may perhaps be of interest to your readers to learn something concerning the "Bermudez" asphalt, which takes its name from the State of Bermudez of the Republic of Venezuela, and within the boundries of which a large deposit of asphalt was discovered some years ago. This immense and inexhaustible deposit of asphalt is more popularly known as an "asphalt lake," since it is constantly, but almost imperceptibly, in motion. Its area covers more than 1,000 acres, and its depth is unfathomable. The ownership of it was acquired by purchase from the Venezuelan Government by the New York and Bermudez Company, of which your writer has the honor to be the manager. The company was organized under the laws of the State of New York, and it maintains its head offices at Nos. 55 and 57 Beaver street, New York city, where all inquiries concerning the asphalt or other products of the company may be addressed. The original purpose of the company was to carry on a general trading and developing business in the natural products of a large territory within the borders of the State of Bermudez, under a concession acquired from the Venezuelan Government, and subsequently acquired by purchase the asphalt deposits, as already stated.

The securing of this asphalt in marketable quantities has taken several years of untiring labor and a large expenditure of capital, owing to the great physical difficulties necessary to be overcome. The lake is now connected by a narrow-gauge steam railroad with a shipping depot, where several vessels with draft of 18 feet can be loaded at the same time. The purity and quality of the asphalt is exceedingly high and is not equalled by any other, as shown in the foregoing comparative statements with the Trinidad lake asphalt, which heretofore has been considered the best.

The phenomena of asphalt lakes is for the sightseer a novelty for the moment, but for those of an investigating mind it furnishes a field for study which is by no means exhausted. It remains for a Tyndall or a Fresenius to tell us all about it. Your writer has lived in close association with it for more than six years and has only learned that he knows nothing about its phenomena.

Commercially its usefulness seems to be well established, but principally for street pavement, its superiority over all other materials for that purpose being almost universally accepted; but even in this sense its field of usefulness seems to your writer to be almost untouched. It is to be hoped that, like kaolin, aluminium, phosphate rock, and many other of the earth's treasures, its true value and usefulness will be speedily learned.

With the hope that I have been able to throw some additional light upon the subject of your inquiry that may be of some service to you, I beg to remain, etc.,

A. H. CARNER.

SUPPLY OF LAND PITCH.

It is about as difficult to estimate the supply of the land pitch at La Brea as it is to estimate the lake pitch. W. O. Crosby, from whose article I have already quoted, makes this observation:

In fact, its [the lake's] appearance is as if the broad-mouthed crater of a low-lying volcano were overflowing with sluggish streams of black lava slowly creeping down toward the sea. These slowly moving masses present curved lines and convex surfaces, and Canon Kingsley has very aptly likened them to glaciers, the lake representing a *mer-de-glace*. The asphalt becomes harder the longer it is exposed to the air and sun, and consequently the downward progress of the "black glaciers" must constantly be checked, if not entirely stopped. It seems impossible to determine the extent of the overflow, for, although the en-

tire slope from the lake to the sea appears as a continuous sheet of pitch, yet it is possible that most of this has extended from the asphaltic sandstone beneath it. The area covered or underlaid by this mantle of pitch is estimated at 3,000 acres.

As I have stated, I do not know when this article was written, but at the present time there is not a "continuous sheet of pitch," as stated, between the lake and the sea. As a general rule, the passer-by sees nothing but an ordinary stretch of land, except in places where the land has been dug off exposing deposits of asphalt; or except, further, he sees what is called "croppings," that is, bowlders or ridges of asphalt creating furrows on the surface of the soil, and which Wall and Sawkins consider "not evidences of flowing, but due to constant expansion and contraction, as well as the effects of traffic." But while the "black glaciers" do not now cover so great a surface they are probably found in larger quantities under the surface than the writer thought. At any rate, his statement conveys a general idea of the vast quantities of asphalt deposited in and about La Brea, and when Wall and Sawkins wrote of the "smaller masses of asphaltum occurring along the seashore or in the woods," those masses were not so much unearthed as now, and I apprehend those eminent scientists did not fully appreciate their extent. It seems reasonable to assume that there is as much La Brea asphalt outside of the lake as inside of it. The area (3,000 acres) given above is probably excessive. One-half that area is believed to be more correct. Assuming, then, that there are 1,500 acres, and that the asphalt therein will not run, on an average, lower than 10 or 12 feet, and that only 20 per cent of this total excavation would be asphalt, the result of the calculation would show an amount of asphalt as great as can safely be expected to be obtained from the lake. But this is very speculative. In some places the earth is 10 feet above the asphalt; in others the asphalt is "cropping" out of the surface of the earth. Some of the excavations have produced asphalt 30 or 40 feet below the surface; and of the total substance excavated from some of the pits over 95 per cent has been asphalt, while the yield in others has not been more than 5 per cent, if that. Altogether, however, I am inclined to surmise that there is more La Brea pitch outside of the lake than in it.

A gentleman who has special advantages to study the situation at La Brea favors me with the following figures, but I must again say they are very speculative:

	Acres.
Asphaltic lands north of the lake	400
Asphaltic lands south of the lake	50
Asphaltic lands east of the lake	700
Asphaltic lands west of the lake	50
Total	1,200

Other estimates are not more than one-half as large as this total.

It is proper to observe that the great body of land in the island is known as "Crown land," belonging to the colony, and Crown lands (unless specially withheld from sale, like the pitch lake and other asphaltic lands at La

Brea) are obtained at public auction, the Government, on request, putting it up to the highest bidder, but not accepting any bid under £1 per acre, except in special cases, as in case of swamp land. I also beg to observe, in a general way from hearsay, that of the 1,200 acres of land estimated above 1,100 belong to or are under lease by the Trinidad Asphalt Company (all undisputed except amounts aggregating probably 10 or 12 acres); about 30 acres are undisputed Crown lands; about an equal number (of which Turnbull, Stewart & Co. own and have charge of about one-half) are undisputed private lands; and the remainder (say 40 or 50 acres), which embraces all of the rich stretch of land referred to, are in dispute between the Crown and various individuals.

It should be noted that, while some or all of these several parcels of undisputed private lands may be under lease, I am of the opinion that very few, if any, of them at present are under the management of the Trinidad Asphalt Company, unless the lands owned and supervised by Messrs. Turnbull, Stewart & Co. be an exception. It may be thought I am indulging unnecessarily in detail; but the fact that the colonial Government, in compliance with its contract with the Trinidad Asphalt Company, will not grant permission to take asphalt from the Crown lands for exportation, and the agent of the Trinidad Asphalt Company will not sell lake asphalt for exportation to the United States, though he sells it without hesitation for exportation to Europe, makes it proper that this report should show as explicitly as possible the supply not under the restraints mentioned.

In respect to the disputed Crown lands—involving, it would seem, a number of claimants—it would require more investigation than the point is worth to give a tolerable idea of the merits of the claims, each of which, of course, stands on its own merits; but the presumption is that the supply of asphalt from claims disputed by the Crown will be considerable for some time to come.

In this connection, I beg to observe that I am in doubt as to what decision is referred to by the inclosure to the Department instruction calling for "a copy of the recent decision of the law court in some asphalt cases dissolving an injunction against certain parties for removing asphalt from certain lands improperly." But I inclose a newspaper clipping, which gives an important opinion of the chief justice, which may set forth the decision referred to. In order to show the feeling that seems to exist between the chief justice and the chief law officer of the Crown in respect to these asphalt cases, I beg here to quote from this opinion and from the remarks, as published, of the attorney-general at a late meeting of the legislative council.

In an action to restrain the defendants from digging pitch, pending an action against them for damages for digging it, the chief justice, in giving judgment, January 11, 1892, said:

I feel strongly it is an application to cripple an adversary rather than to do anything that is necessary for the preservation of property or the keeping of things *in statu quo* until the

trial, and the court ought to be very careful how it allows its great and extensive powers to be made use of by one litigant as a weapon against the other, and especially by the richer litigant for the purpose of tying the hands, as it were, and shutting the mouth of his poorer adversary.

We have heard, moreover, over and over again, in the course of these long discussions in the pitch cases, that the object of the Government raising suits and passing ordinances to restrain persons from digging on lands alleged to be Crown lands is to prevent competition in the American market against the pitch of the Trinidad Asphalt Company. This must necessarily, therefore, be the object of the Trinidad Asphalt Company itself, which applies for injunctions in some of the cases; and the person who, by his affidavit, supports the case of the plaintiff here, whether he be a real or nominal plaintiff, is the local manager at La Brea for the Trinidad Asphalt Company.

Now, a court of justice can not permit its process to be used to further interests of that nature.

It can not but be clear to everyone that the injunction is the chief end and aim of raising these actions. No one, unless he had such an end in view, would have ventured to come to a court having equitable powers and to say, in effect: "I have no title to my lands in the way of deed or grant or conveyance of any description, and I have not had a sufficiently long possession to enable me to claim a title by possession; but upon that possession, insufficient as it is, I claim an injunction against the ostensible owner, in order that he, at least, may not make use of the property, and that will prevent him competing with me in the open market in my commercial undertakings." That is, in effect, the position of the plaintiff and what he demands here, and it is not for the protection of such objects that the courts exercise their powers of injunction. For the preservation of property the court will use its power when satisfied that that is the true object of the plaintiff, and when the plaintiff shows at least a prima facie case that he can sustain; but I am not satisfied that the preservation of property is the real object of this application, and prima facie the case of the plaintiff seems a very shadowy one. In my opinion, therefore, the interlocutory injunction must be dissolved.

On the other hand, the attorney-general moved in the legislative council, April 4, 1892, the first reading of an "ordinance for the better protection of lands claimed to belong to the Crown," and his remarks, as published in the Public Opinion of April 8, 1892, are in part as follows:

The attorney-general said as attorney-general of the colony it was his duty to defend the property of the Crown colony. He had waited a long time and had tried all the ordinary means to protect the property of the Crown. He had found very strong cases prima facie in favor of the Crown; cases of land which, according to the records of the Crown lands office, had never been parted with by the Crown; cases in which land from Spanish times until now had been natural savanna at La Brea; cases of valuable land which had been leased by the Crown to Lord Dundonald and were again leased to Lord Dundonald for another term of years; and in the immediate vicinity he saw land which was natural savanna which to-day was subject, not to one, but to a dozen, claims. There was no record of their titles, nor was there any record of their paying one atom of taxes. He had found a bona fide title on behalf of the Crown, and he, as a lawyer, said that these were fit and proper cases to be tried if ever there were any; titles which he would issue his fiat for. A very wide and proper discretion was given to him as attorney-general; he had to decide whether or not a man could be brought to trial, and he said "now there is a genuine title which ought to be tried on behalf of the Crown." Were they going to deprive him of the right which he possessed? It was not for him, and he would not for a moment criticise the court; but in the courts it had been practically held by two of the judges, as a reason why an injunction should not be granted, that the pitch after being dug out welled up again. There was valuable property to be protected, and he maintained that was no argument; and, as the Crown was refused protec-

tion of its property, he thought there should be a statutory injunction which would protect the property of the Crown until the hearing of the case. He had not applied for any rights to the Crown which the Crown had not before. If the council did not help him in this way, thousands of pounds would be going from the colony—it was going every day. Great masses of pitch were being taken from Crown lands, as they were believed to be, and which they were prepared to go into court and prove to the best of their ability. He had asked them to give the Crown nothing but what it had before, and he only asked them to give it in cases where people had stood by on their rights for three years in respect of that land. It was not for a long period he wished to have these injunctions, but until the question of title had been tried. Because action of this kind had not been taken before, immense damage had been done to the concession; and the colony was losing property at an enormous rate if the Crown was right in its contention. The only alternative which the executive had was one which he had hesitated to advise—if the council would not approve of the ordinance and say the Crown must be protected by the courts, there must be an appeal to force—that was the alternative unless the principle was assented to by the legislature. He asked honorable members not to throw out the ordinance at that sitting, for it was absolutely necessary.

COMMERCIAL HISTORY OF LA BREA PITCH.

The tenth Earl of Dundonald seems to have been the first to bring Trinidad pitch into commercial notice. In the year 1851 he leased for twenty years a large part of the lake and some of the adjoining asphalt land, and in 1865 assigned his lease to a joint-stock company called the Trinidad Petroleum Company (limited), organized with the view principally to distill petroleum out of the asphalt. This company, which seems not to have been prosperous, went into liquidation in 1866. Mr. Thos. A. Finlayson was its manager here, and, it seems, succeeded to its leasehold rights and continued shipping pitch, presumably from the lake.

In the meantime other shipments were made extending back into the fifties. Wall and Sawkins, writing in 1858, state that "the source from which the material for shipping has been hitherto derived is the deposits or collection existing at La Brea Point." The Messrs. O'Connor Brothers shipped more or less pitch annually from 1862 to 1866, inclusive, and some little thereafter, and I am informed by Mr. Masson, merchant, then clerking for them, that the pitch they shipped—almost exclusively to Havre and Marseilles—was dug principally, if not altogether, from the pitch banks at Point La Brea, and that it is also his recollection that this pitch was satisfactory to the consignees, except one cargo, which was complained of as containing too much earth.

In 1871 the then governor concluded to lease the unleased portions of the lake, as well as the remainder when the existing leases thereon terminated, in lots of only 5 acres each, and accordingly, in January, 1871, the following regulations were promulgated:

SPECIAL REGULATIONS FOR THE SALE AND LEASE OF CROWN LANDS FOR THE PURPOSE OF EXPLORING AND TAKING THEREFROM PITCH, PETROLEUM, MINERAL OILS, ETC.

PITCH LAKE.

(1) The following rules will be observed in respect to the portion of the pitch lake now in the possession of the Crown and to the remainder of the lake when the existing leases terminate.

(2) The surface of the lake will be divided into lots containing as nearly as possible 5 acres each.

(3) Every lot will be leased for a period of fourteen years.

(4) The rent of each lot will be at the rate of £2 per acre, payable yearly in advance.

(5) The leases will not be transferable without the consent of the governor, and no lessee will be allowed to sublet the whole or any part of his allotment without such consent.

(6) The leases of the lots will be drawn up in a form to be approved of by the governor.

(7) Every lot will be leased subject, when necessary, to a right of way not exceeding 12 feet in width across the lot, to afford access to other lots.

(8) Every lessee will be entitled to a renewal of his lease for a second period of fourteen years at the same rent, without the same being put up to auction, if he shall prove to the satisfaction of the governor that he has raised and exported during each of the last seven years of the lease 500 tons of pitch, or its equivalent in articles manufactured from the produce of the lake.

(9) Lessees may at any time resign their leases.

(10) The leases will be put up to public auction at the Crown lands office in Port-of-Spain.

(11) One month's notice of each sale will be given.

(12) The leases will be put up for sale at the rent and on the conditions hereinbefore named, and the biddings will be as a premium for each lease, and the amounts offered are to be paid at the time of sale.

(13) Every lease will be absolutely forfeited if the same be assigned without the consent of the governor, or if the rent be not paid within three calendar months after the day on which it shall become due in each year.

(14) Every existing lessee of a portion of the lake shall, upon the expiry of his present lease, be allowed to take a lot on lease under these regulations without competition, if he desires to do so.

MINERAL LANDS.

(15) Any person desiring to search over the Crown lands for petroleum, mineral oils, or coal shall transmit to the subintendant of Crown lands a petition addressed to His Excellency the governor, stating the tract of Crown land over which he is desirous of searching.

(16) Upon such petition being presented and approved by the governor, and upon the payment of a fee at the rate of 1*s.* per acre, license will be granted to the applicant to occupy the land named in the license for one year, with exclusive power to search in any part of it for petroleum or other mineral oil or coal, to set up works, sink wells, and export the produce, subject, however, to the payment of such rates and duties as may be imposed by law upon such produce.

(17) The tract of land to be included in each license will not, except in special cases to be determined by the governor, exceed 2,000 acres.

(18) At the end of the year for which the license has been granted the licensee shall have the privilege of purchasing, at the upset price of Crown land for the time being, without competition, as much of the land as he may require for the continuance of his operations, not being less than 160 acres.

(19) All expenses of survey and fees of grant must be paid for by the applicant.

(20) The licenses will not be transferable without the consent of the governor.

(21) Special licenses will be granted to all persons purchasing Crown land to take coal therefrom and from the adjoining lands (if power for that purpose be given) upon payment of a royalty of 6*d.* per ton on all coal so taken.

(22) These licenses will be issued for five years only, but will be renewable for twenty-one years more if the licensee shall prove to the satisfaction of the governor that during the said period of five years he has raised or taken from the land named in the license 5,000

tons of coal. The renewed licenses will be liable to forfeiture by the governor if a certain quantity of coal, to be hereafter named by the governor, shall not be raised or taken annually during the continuance of the license.

By order of the governor.

MANUEL SORZANO,
Secretary to the Intendant.

JANUARY 16, 1871.

Under the operation of these general regulations the entire lake, with the exception of one 5-acre lot, reserved by the Crown, came under the control of four lessees, to wit, C. F. Stollmeyer, George R. Field, Thomas A. Finlayson, and the firm of Previté & Greig, of London, all of whom (with the exception of the last named) were lessees at the time the new regulations were promulgated. And I think it probable that Messrs. Previté & Greig (who were the London agents of the defunct petroleum company) were interested in the leasehold succession of that company in connection with Mr. Thomas A. Finlayson. Under the construction put upon the regulations nothing seems more natural than that the lake would fall under the control of the lessees existing at the time the rules were promulgated. As construed, those lessees not only had the right to take a 5-acre lot each at £2 per acre (which made it impossible for others to create a monopoly without their concurrence), but allowed them to purchase other lots at public auction. And the fact that Mr. Thomas A. Finlayson purchased at public auction several of the 5-acre lots, when one lot would furnish as much pitch as a dozen (by the excavations refilling), leaves little room to doubt that his object was to prevent pitch reaching the market through other hands. That a monopoly of the lake pitch would follow such an arrangement needs no further proof. Exactly when the monopoly went into effect is more difficult to determine; but in one of the statements of Mr. Finlayson it appears that "efforts to increase the mercantile profit derived from the said demised premises" were made without success prior to 1877, "owing, as I believe," said he, "to the inadequacy of the protection afforded by the said leases." But while Mr. Finlayson and the other lessees controlled the market of the lake pitch, they had formidable competition from shipments of land pitch by Mr. John G. Douglas, lessee of Point d'Or, and by the West India Shipping Company, which owned the asphalt land of Bellevue.

It was not till the winter of 1879–'80 that all these conflicting interests were united. Mr. A. L. Barber and his associates had lost money in the street-making business in Washington city in 1879, and, with a view of protecting himself and his associates from undue competition, he visited Trinidad in December of that year for the purpose of reconciling the divers interests to united action. His efforts were successful.

Things thus fixed seem to have run smoothly till 1886, when the colonial Government decided that the 5-acre lot, referred to above as having been reserved by the Government, should be thrown open to the market by granting licenses to dig pitch therein. When it is borne in mind that this

5-acre lot could furnish as much pitch as the remainder of the lake, the discomfort of the lessees and their associates can well be imagined. The most vigorous action was taken to defeat the issuing of these licenses. The matter was taken to the privy council, but the decision of the colonial authorities could not be set aside. By this decision the lessees and their allies were reduced to the necessity of doing business without "protection" or quitting business or making other arrangements with the Government. The latter course was adopted. And here the superb ability of Mr. A. L. Barber again showed itself. He brought about a concession of the lake for twenty-one years, and subsequently succeeded in having the same extended for twenty-one years longer. A careful reading of the extracts from official papers will not only give a clear idea of the negotiations, but will throw more or less light on the conditions of the Trinidad asphalt trade and industry.

PAPERS RESPECTING THE CONCESSION OF THE PITCH LAKE.

As a result of conversations between Mr. Barber and the under secretary of state for the colonies, Mr. Thomas A. Finlayson, a member of the Trinidad legislative council (interested with Mr. Barber in the enterprise), submitted to the governor, under date of February 1, 1887, a proposition to the effect, in general, that the Government concede to "the New York and Trinidad Asphalt Company and Messrs. Previté & Greig, merchants, of London," the pitch lake for twenty-one years; that in that time no pitch is to be taken from Crown lands under form of lease, license, or otherwise; that the Government is to maintain a duty on exports of raw asphalt of 6*s.* 8*d.* per ton, whether such asphalt be won from the lake or elsewhere in the island; that concessionaires are to export 30,000 tons per annum (1 ton of *épurée* counting for 1½ tons of raw), and to pay £10,000 in advance yearly as and for this export duty, and to pay the same duty per ton on any excess of 30,000 tons yearly exported by them; that, at the expiration of the twenty-one years, the Government is to have the alternative to take the improvements "on payment in cash of their fair appraised valuation of £5,000" or to grant an extension for ten years more upon the same terms, the improvements then to become the property of the Government.

Messrs. Previté & Greig, under date of February 22, made the following points in favor of the above proposition:

* * * * * * *

We call your attention to the following points:

(1) Asphalt, as a paving, has to compete with macadam, granite cubing, and wood. None of these powerful competitors require machinery to lay them in roadways; the process employed is simple. Asphalt, however, requires expensive machinery—crushing mills, boilers, refineries—all machinery which is quickly worn out. Asphalt will not boil at 212°, and the action of fire to melt it destroys the boilers rapidly; consequently the outlay for plant is heavy. With any liability of competition in Trinidad asphalt, no solid, reliable firms or companies will erect a number of refineries, build crushing mills, etc. Each set of works is erected for a special city or district, in order to carry out the asphalt work in such city or district. As we told you verbally, the Barber Asphalt Paving Company in America has held its hand since the privy council decision. It has erected no new works, but has just sought asphalt

paving contracts for 1887 where it has works. Nor has that company ordered a ton of Trinidad asphalt since October last. The fear that men not acquainted with the trade, merely because Trinidad asphalt is free, may rush in and compete paralyzes the action of the Barber company, and has decided them to erect no fresh works. The cost of their plant, premises, etc., in New York, set up only last year, was $85,000, or £17,000.

(2) Our object for the past sixteen years has been to keep prices low to encourage the asphalt trade. We were called monopolists, but we never asked high prices, because of the competition asphalt has to encounter from wood, granite, etc., and the heavy outlay for works. This will continue to be our object if the proposals to lease the entire lake are accepted by Her Majesty's secretary of state for the colonies. We should never have increased the trade from 3,700 tons in 1870 to 36,000 tons in 1886—the period during which we were "monopolists"—unless we had fostered the trade, run heavy risks, and always supplied the asphalt paving companies at a low price. We protected them while we protected the trade in Trinidad. The business yet to be done in America is enormous, but it entirely depends on how the Trinidad supply is regulated.

We venture to submit that this is very similar to the protection given by Parliament here to a gas company. Its works and mains, etc., are protected, or no sensible man would build gas works if he were liable to have his outlay rendered valueless by competition.

(3) Further, each sort of asphalt requires separate and special handling. The Limmer asphalt mines, in Germany, are only at the disposal of the Limmer Paving Company, of England, for work here. The Val de Travers asphalt from Switzerland is alone worked in England by the one company. It is precisely the same in Paris. In like manner, Trinidad asphalt requires its special handling—its experts. Its reputation suffered greatly when Princes street, in the city, was laid in 1871 by Trinidad asphalt and broke to pieces in six months and was taken up to be replaced by Val de Travers. If unskillful people use the Trinidad again, the same injury would happen; and if all the good asphalt rocks of Europe are only intrusted to the hands of skillful men, why should Trinidad be exposed to the risk of failure? This is really a most important point.

(4) As the trade in Trinidad is "a going concern," which has been checked since the privy council decision, it is of great importance that a decision as to the new proposal for leasing the entire lake should be taken promptly. We may mention as a reason (*inter alia*) that the Barber Asphalt Company had leave from the city of London corporation to lay a sample piece of their pavement (500 square yards) in Aldersgate street last November. The company resolved not to incur the outlay when the directors saw that Trinidad asphalt might be free to all. Prior to this they had already engaged to spend £12,000 in laying their pavement in Paris and Berlin, but their whole business is stopped.

* * * * * * *

P. S.—We beg leave to inclose a copy of a letter written to us by Mr. A. L. Barber, dated December 15, to show you that the largest consumer of Trinidad asphalt is willing to pay a higher price if necessary to secure protection.

Mr. Finlayson wrote the subintendant of Crown lands March 31, 1887, as follows:

I have the honor to acknowledge the receipt of your letter of 28th current, informing me that the secretary of state has conveyed to his excellency his opinion that it would, on the whole, be for the advantage of the colony to accept the proposal made in my letter of the 1st of February last about the pitch lake, provided that the exclusive right to win pitch be limited to the pitch lake.

In reply, I have to request you will inform his excellency that the concession, if so limited, will be practically of no value.

We proposed that, for the large annual minimum sum of £10,000 which we offer to pay, the Government should concede to us the exclusive right to win asphalt from the pitch lake

for twenty-one years, and during the continuance of that term should not grant to others the right under the form of lease, license, or otherwise to take asphalt from the pitch lake or from any Crown lands.

The Crown lands in the vicinity of the pitch lake have large deposits of pitch easily obtainable and equal in quality to the lake pitch. To concede to us the right to win asphalt from the lake and at the same time to retain the right to allow the public to obtain asphalt from the Crown lands in the neighborhood of the lake is to deprive the concession to us of all value.

You will observe that we do not ask the right to win asphalt from those lands, as we have done with regard to the pitch lake. We merely ask that, in effect, the Government shall not allow others to do so.

I am quite willing to modify my proposal to meet the case, and now propose that the Government shall not grant to anyone the right to win asphalt from any Crown lands within 3 miles of either side of the lake, and, if this be approved, I am willing to abide by the terms of my proposal of the 1st of February last in all other respects.

* * * * * * *

Under date of August 1, 1887, Mr. Barber wrote the attorney-general of Trinidad, in which he said:

* * * * * * *

(2) In July, 1878, my attention was first called to De Smedt's processes of making an artificial asphalt pavement in imitation of the rock asphalt of European cities, and soon after I, with others, undertook our first contract in this city, having successfully defeated the efforts of other parties to continue the use of coal-tar products in such work. I purchased our first supplies from Mr. E. Burgess Warren, who had bought the same from the agents of Mr. Finlayson. In the spring of 1879 I bought from Mr. John G. Douglas a cargo of *épurée*, which had been lying on a wharf in this city for many months, at a price much below cost to him, he having been unable to find any purchaser. I also entered into a contract with him to furnish us with pitch for a term of five years, with the option of renewing the contract twice for similar periods, being the entire term of his lease of Point d'Or.

Having induced the authorities of this city to lay more of De Smedt's pavement, in the spring of 1879 we took, at a public letting, 104,000 square yards of work at the lowest price named by several competitors. Upon completing the work we found that it had cost us over 10 per cent more than the amount paid us therefor.

(3) In the light of this experience, the conviction was forced upon us that we must either find some way by which we would be protected from undue competition or else we must give up the business; and in December of that year I visited Trinidad for the purpose of reconciling the diverse interests to united action. From Trinidad I went to London for the same purpose. My efforts were successful. Every existing interest, active or undeveloped, was duly considered, and every person having any actual connection with the business was consulted and easily induced to pull together with all the rest in a united effort to promote the common good of all concerned. No one was excluded who had any tangible interest in the trade.

(4) Under the arrangements thus inaugurated greater economy in handling shipments was secured, because the expenses of managing the business were reduced, and a reasonable margin of profit, and that only, was secured to everyone according to his position and rights, while the real promoters were encouraged to push the trade and so increase the shipments. In short, producers and immediate consumers were united into a great coöperative establishment. As to ultimate consumers, viz, the cities and people adopting the pavement, no unfair advantage was or could be taken of them, since no one could compel them to adopt the pavement against their will, nor could they be persuaded to give it preference, except at such prices as seemed right and fair in competition and comparison with pavements of wood, stone, tar and concrete, and macadam. Indeed, the great difficulty is to convince people that they will get good work, the price being a matter of secondary consideration.

(5) In 1882 I introduced the pavement into two or three cities, and each year has added to the list, until now we have established works in nineteen cities of the Uuited States. Other companies, in which I have no interest, but which have been working in accord with us, have been organized and are working successfully in many more, all of them being willing and glad to purchase their supplies of asphalt under the existing arrangements, giving them reasonable security in their business, which otherwise would not be worth anything.

* * * * * * *

(12) It may be affirmed that other causes have operated to create this remarkabe difference. Nevertheless, I maintain and assert positively that over 80 per cent of the American trade has been due directly to my own personal efforts and to those of agents under my direction.

(13) It may be claimed that an open market, and one entirely uncontrolled, would have caused equal or greater results. To this I give a flat denial, and I affirm, on the contrary, that, with all the work now done and the reputation secured, only intelligent and efficient action on the part of good soliciting agents will secure new contracts of any consequence.

(14) In further following of the last two paragraphs, I affirm that I would never have prosecuted the business, after the sad experiences of 1879, if I had not been assured of reasonable protection from undue competition, and I am equally confident that no one else would have done so. To obtain contracts for paving requires an expenditure of much time and money, coupled with intelligent and persistent action. Only parties having large pecuniary interests at stake can and will make the necessary expenditures and efforts. Knowing that in most cases public contracts are open to public tenders and will be given to the lowest bidder, all motive for effort disappears if it is known in advance that Tom, Dick, and Harry, shoemakers and blacksmiths, can rob one of the fruit which justly belongs to him who planted and cultivated the tree.

* * * * * * *

I now beg to notice briefly some of the objections which have been urged against this grant:

(1) That it is a monopoly.

I answer that it is not a monopoly, but a partnership, in which the island of Trinidad is a special partner, and all others—leaseholders, shippers, commission merchants, laborers, refiners, contractors, and many more—are active partners, pushing the trade to the advantage and profit of all concerned. The object is not to corner the market, prevent sales, and obtain high prices, but it is to promote trade and increase shipments by supporting those who will expend time and money in exploring new fields and creating greater demands in old ones. It is protecting chosen agents from disastrous competition, which ruins both principal and agent. It is no more a monopoly than railroads or turnpikes or gas companies are monopolies. All of these methods of promoting public interests are recognized, and so have grants and concessions of mineral rights throughout all time and in every land.

* * * * * * *

(5) It is inconsistent for the shippers like Mr. Douglas to have opposed, as formerly he did, any increase in the export duty and now to propose or acquiesce in the contemplated increase.

Answer. The proposal really emanates from the paving contractors, and not from the shippers.

* * * * * * *

(7) Trinidad has a valuable property in this pitch lake—in fact, a monopoly of its own—and can do as it pleases.

Answer. Deposits of asphalt are known to exist in many places in the United States, in Mexico, in Cuba, and in Venezuela. What Trinidad refuses may be granted by one of these other countries.

In fact, Venezuela has already given sole concessions for many years. Relying on the regulations of 1871, we have thus far used Trinidad asphalt in our business, and have made our reputation in its use. We therefore prefer to continue to use it, and to use it exclusively. We consider that the basis for future business as outlined in the proposals is a liberal one for the colony. Certainly it seems to have been so formulated as not to have been open to criticism so far as the terms themselves are concerned. We aimed to make the terms so liberal and the conditions so unobjectionable as to commend the proposal to the prompt and favorable action of the Government. We can not see how these terms can be changed to any better purpose or effect. If the colonial Government shall see fit to accept the proposal, we believe that a prosperous future awaits all parties interested in the pitch lake, and, most of all, the Government itself. But should the council reject the offer, we must, of course, abide by its action, and we shall, of course, be at liberty to adopt any other policy which may commend itself to our good judgment. We are already in doubt whether the amount offered and guarantied to the Trinidad Government, if invested in the development of other deposits of asphalt which have been recently brought to our notice, and the control of which is now offered to us on terms fully as favorable as the regulations of 1871, on the faith of which we have hitherto acted, would not result in supplying us with material equal in every respect to that obtained from the pitch lake at a large saving in cost to us.

* * * * * * *

The following European paving companies petitioned against granting the concession: Val de Travers Company, contractors of commune of Grassy, Société Français des Asphaltes, United Lunmer and Vorwohle Company, and Compagnie Générale des Asphaltes. These petitions bore different dates, but the contents were the same and as follows:

To His Excellency Sir HENRY HOLLAND, K. C. M. G.,
Colonial Office, Downing Street.

SIR: The undersigned wish humbly to bring to your notice an article published in the European Mail of the 16th instant, showing that it is in contemplation to grant certain gentlemen the monopoly of the pitch taken from the lakes in the colony of Trinidad.

We, as large users of and traders in the commodity, feel that if the proposal is carried into effect it will, by raising the price of the raw material, seriously interfere with its extended sale.

We may mention that the mere possibility of the lake being thrown open has resulted in the fall of quite 5*s*. per ton, and, on the other hand, we have to look to an advance upon the old price should the proposal be carried out.

We therefore trust you will reconsider the matter before definitely settling it in a manner which would, we feel convinced, tend to restrict the output of the pitch.

And your petitioners humbly pray.

On the other hand, several American companies petitioned in favor of the acceptance of Mr. Finlayson's proposal. Their petition closed as follows:

And your petitioners further say that much prejudice exists in certain parts of the United States against this pavement by reason of its alleged slippery character, and, were the business to fall into the hands of speculators, they stand ready to avail themselves of an open market in this material and to lay pavement only intended to last until they can get their pay or a part of it, your petitioners believe that Trinidad asphalt pavements would soon fall into disrepute and disuse, to the damage of your petitioners and those interested in increasing the output and use of Trinidad asphaltum.

Wherefore your petitioners pray that the proposal of said Finlayson and his associates, now before you, may be accepted.

Your petitioners further say that they have no pecuniary interest in the business of said Finlayson and his associates, and no interest whatsoever, except as above stated; that they have no interest in the business of A. L. Barber or of the Barber Asphalt Paving Company; and that neither said Barber nor said company has any interest in the said business of your petitioners; that, on the contrary, they are rivals in the paving business in the United States.

And your petitioners further say that the processes and machinery for manufacturing their particular products are fully and completely covered by said letters patent, and that your petitioners are fully and completely protected in the exclusive manufacture of compressed asphalt blocks and tiles thereby, and that no fear of competition in this product actuates them in making this petition; but your petitioners well know that open and unlimited competition in asphalt pavements generally will be a great damage to them, for the reason that the public fails to discriminate between the different manufacturers and layers of asphalt pavements and hastens to condemn all for the unskillful or fraudulent work of one.

Wherefore your petitioners will ever pray.

THE INTERNATIONAL PAVEMENT CO.,
[SEAL.] By WALTER S. WILKINSON,
President.

THE HASTINGS PAVEMENT CO.,
[SEAL.] By C. G. PALMER,
President.

ASPHALT BLOCK CO. OF PHILADELPHIA,
[SEAL.] J. C. DAUBMANN,
President.

THE TRINIDAD ASPHALTUM BLOCK CO.,
[SEAL.] By GEORGE B. UPHAM,
Its Attorney.

THE MARYLAND PAVEMENT CO.,
[SEAL.] By WALTER S. WILKINSON,
President.

THE ASPHALT BLOCK MF'G CO.,
[SEAL.] By HENRY C. BERRY,
Secretary.

On September 1, 1887, the legislative council passed the following resolution by a vote of 7 to 5:

In the opinion of this council it is to the interest of the colony that the concession asked for by the New York and Trinidad Asphalt Company and Messrs. Previté & Greig for the grant to them of exclusive rights to win pitch from the pitch lake at La Brea be granted on the terms and conditions specified in Mr. Finlayson's letter dated the 1st of February, 1887, subject to the modification that the concession for the last seven years of the proposed term of twenty-one years shall be conditional upon the concessionaires having paid to the Government during the first fourteen years of the term under the concession or otherwise a sum amounting to not less than £168,000.

On the 2d of November, 1887, the secretary of state for the colonies wrote the governor as follows:

* * * * * * *

(4) The objection to the concession to which I attach most weight is that, while exporters of pitch other than the concessionaires would be obliged to pay the same rate of export

duty as the concessionaires, the latter would pay no royalty for the pitch won from the lake, and, upon the whole, I have arrived at the conclusion that it would be fairer to other exporters if it could be arranged that the amount payable by the concessionaires should be considered in part as a royalty, and the remainder as export duty, an equivalent rate of export duty being imposed on all pitch exported from the island.

(5) From the correspondence with Messrs. Previté & Greig annexed, you will see that they agree to such a modification of their original proposal, and that they are prepared to pay the £10,000 per annum for 30,000 tons of pitch to cover royalty at the rate of 1*s.* 8*d.* per ton on raw pitch and 2*s.* 6*d.* per ton on *épurée*, and export duty at the rate of 5*s.* per ton on raw pitch and 7*s.* 6*d.* on *épurée*, similar export duties being levied on all pitch exported from the colony.

(6) You will now be good enough to lay this modification of Mr. Finlayson's proposal before the legislative council, and, if it is approved by the council, to take steps for granting the concession applied for in this amended form and with the modification suggested by the legislative council.

* * * * * * *

On the 25th of November, 1887, the legislative council passed the following resolution by a vote of 8 to 3:

That this council approves of the following modifications of the terms of the concession of rights to win pitch from the pitch lake at La Brea, recommended by resolution of this council dated 1st September, 1887, that is to say, that the concessionaires, instead of paying an export duty of 6*s.* 8*d.* per ton on raw pitch and 10*s.* per ton on *épurée*, shall pay a royalty of 1*s.* 8*d.* per ton on raw pitch and 2*s.* 6*d.* per ton on *épurée* and export duty at the rate of 5*s.* per ton on raw pitch and 7*s.* 6*d.* per ton on *épurée*, similar export duties being levied on all pitch exported from the colony, and that the minimum sum of £10,000 per annum to be paid by the concessionaires shall be taken to cover the above royalty and export duty in respect of 30,000 tons of pitch.

PAPERS IN REFERENCE TO EXTENSION OF LEASE OF PITCH LAKE.

The deed of concession, as drawn up and signed, provided for three distinct periods: A period of fourteen years; an extension, on certain conditions, of seven years; and a further extension, at the option of the Government, of "ten years or more." It was openly alleged by the opposition in the legislative council that the last two words ("or more") were added without legislative authority. On December 13, 1889, Mr. Finlayson, on behalf of the concessionaires, submitted to the governor a lengthy letter from Mr. Barber, in which the latter said:

I am clearly of the opinion that the Government would find its interests greatly promoted and its revenues largely increased if the uncertainty now attaching to the "ten years or more" period could be removed.

* * * * * * *

Returning now to the matter of determining the uncertainty which attaches to the "ten years or more" period, you will ask what plan I have to suggest. In reply I have to say that the simplest and easiest way would be to follow out the arrangement relating to the seven year's period, which is conditional upon the payment of £28,000 extra, being at the rate of £4,000 per year—that is, let it be understood and agreed that as the payment of £28,000 extra fixes the seven year's period, so the payment of any additional £4,000 shall entitle the concessionaires to an additional year.

* * * * * * *

This proposition, giving to the concessionaires an additional year for every £4,000 they paid in the way of export tax and royalty on annual exports above the 30,000 tons they were required to take, would have placed it in the power of the concessionaires to have carried the lease *ad infinitum*. This feature of the proposition creating a perpetuity was not entertained, but Lord Knutsford signified his willingness to approve of the extension for twenty-one years on the conditions named (the exportation of 252,000 tons extra at 1*s*. 8*d*. royalty and 5*s*. export duty per ton during the first twenty-one years—£84,000), "provided that the concessionaires will agree to the abrogation to the clause in the deed of concession which enabled them to put an end to the concession at the end of any year by leaving the rent unpaid for sixty days"—which he believed to be a variation from the original agreement. In reply to this Mr. Barber wrote the governor, under date of April 26, 1890, as follows:

* * * * * * *

I now come to deal with the condition put by Lord Knutsford upon the proposal, viz, that the clause giving concessionaires power to end the concession in any year should be abrogated. I regret to say that the concessionaires are not in position to comply with this condition, as will appear from the correspondence between two of them and his lordship upon this point, copy of which I inclose herewith. Immediately following upon this correspondence I received telegrams at New York from Mr. Previté advising me to withdraw the proposal now pending. I was upon the point of doing so when I decided to come to London with a view of trying to find some basis for agreement on this question.

And here it becomes necessary for me to state that immediately after the favorable action of the legislative council in September, 1887, I perceived very clearly that unless the various interests of the concessionaires, viz, Mr. J. W. Previté, Mr. H. A. Greig, and the New York and Trinidad Asphalt Company, and of others owning or controlling the large deposits of asphalt existing in Bellevue, Point d'Or, Brighton, and Plaisance, and other lands at La Brea, could be united into one company or enterprise, there was great danger that quarrels and internal dissensions might arise which would ruin the business and destroy the value of the concession itself. After considerable thought, I formulated a plan for the merging of all or most of these interests into one company.

By reason of the existing incorporation in the United States of the New York and Trinidad Asphalt Company, one of the concessionaires, and also of the fact that the larger part of the shipments of pitch were made to the United States, it was decided to incorporate the new company in the United States. This was done in August, 1888, under the title of "The Trinidad Asphalt Company," of which I am the president. The company has officers and agents in London and Trinidad. This company has acquired the properties above named in fee simple, and also the respective interests of all the concessionaires, without disturbing their relations to the Government.

The interests of the Crown were promoted and not prejudiced by this consolidation.

As I am desirous of meeting the views of Lord Knutsford, indicated in Mr. Wingfield's letter of the 12th instant, I would propose, on behalf of the Trinidad Asphalt Company, to guaranty to the Crown the payment of £140,000, being the amount of the annual advance of £10,000 for fourteen years, on account of which payments already made amount to more than £50,000. This, with the further payments of the current year and the annual deposit at the beginning of the fourth year, should amount by February, 1891, to £70,000.

I trust that this proposition will meet with the approval of your excellency and of the legislative council. If so, I am confident that the results will be such as to cause those who

are now opposing it to admit their mistake in less than three years, as was the case with some who objected to the concession in 1887.

There is one point which should not be overlooked, viz: By the end of the current year the concessionaires will have paid about £60,000, which will cover the £28,000 extra to secure the seven years' period, and it will only be necessary to pay the minimum of £10,000 during the remainder of the fourteen years. If the proposal now pending is adopted, it will be our policy to ship only from the pitch lake, paying the royalty of 40 cents per ton, as well as the export duty of $1.20; otherwise, after taking the first 30,000 tons yearly from the pitch lake, it would undoubtedly be for the advantage of the company to ship from Point d'Or. This would effect a saving to the company and a loss to the Government of 40 cents out of every $1.60, or one-fourth, which, on extra tonnage, amounting in the former case to £84,000, would effect in the latter case a loss to the Government of £21,000. This loss would not have been possible if the terms of the original proposal for the concession had not been modified at the instance of those who opposed it. The acceptance of the proposal now pending will prevent this loss.

* * * * * * *

In reference to the proposal Lord Knutsford wrote the governor on June 25, 1890, as follows:

* * * * * * *

(4) I am of opinion that this guaranty might be accepted in substitution for the abrogation of the sixty days' clause, provided that it is a substantial guaranty, and not merely the undertaking of the Trinidad Asphalt Company to pay the £140,000, and provided also that the conditions suggested in the eighth paragraph of your dispatch are superadded, under which the concessionaires could not determine the extended concession without giving a year's notice, or for any other reason than that the lake had failed to give an adequate supply of pitch, except on payment of a fine of not less than $75,000.

* * * * * * *

The matter was adjusted substantially on this basis, the mode of payments being changed to one permanent deposit of £10,000 at London in the form of consols or acceptable securities, interest on same accruing to the company, and the principal being held as security for the undertaking of the company.

On July 23, 1890, Mr. Barber wrote the governor in respect to the profits of the Trinidad Asphalt Company as follows:

* * * * * * *

(*a*) The price of £2 10*s.* is a quotation merely, few sales, if any, being made at this figure.

(*b*) These few sales are made entirely by importers handling pitch obtained from deposits outside of the pitch lake, principally in village lots at La Brea. They are enabled to get so high a price by reason of the fact that the concessionaires, or their successor, the Trinidad Asphalt Company, have adopted the policy uniformly followed by the European asphalt companies, which consists in establishing special agencies for particular uses and for certain territory. The necessity for adopting such a policy was clearly set forth in the letter of Messrs. Previté & Greig addressed to E. Wingfield, esq., under date of February 22, 1887, and printed in Trinidad Council Paper No. 54, of 1887, among other papers with reference to the pitch lake, to which I would ask special attention. The adoption of this policy has enabled outside shippers to ask and obtain higher prices than would otherwise have been possible, the fact being that much of the material so offered has been purchased by the agents or consumers of the lake pitch in order to prevent their own market from being ruined.

(*c*) At no time have the concessionaires or the Trinidad Asphalt Company realized the price above quoted of £2 10*s.* per ton; but, on the contrary, a large portion of the material

has been sold under contracts made prior to the granting of the concession, and which, under their terms, will be coextensive with the concession and any extensions thereof at the fixed price of £1 13*s.* 4*d.* per ton, thus leaving, on the basis of the committee's estimate of cost, a profit of only 4*s.* per ton. Of this amount much less than one-half goes to the concessionaires, the greater part being consumed in the expense of management and in payments to the former owners of property containing large deposits of pitch outside of the pitch lake, the control of which was absolutely essential to the successful promotion of the business.

* * * * * * *

The following letter, written by Mr. Barber to the governor of Trinidad, seems to leave little doubt that the Trinidad Asphalt Company was sufficiently mindful of the colonial revenue, not only in the way of increasing the price of Trinidad asphalt, but also in the way of pointing out how a reasonable action anticipated from the United States Government might be got around:

No. 1 Broadway,
New York, July 30, 1890.

Sir: My attention has been called to a report of the proceedings of the legislative council held July 7, as published in the Port-of-Spain Gazette under date of July 8.

In discussing matters relating to the pitch-lake concession two or three remarks were made concerning which I beg leave to submit the following observations:

(1) It was claimed that the Government gets for the pitch, not 6*s.* 8*d.*, but only 40 cents, the difference, 5*s.* (or $1.20), being merely an export duty. This statement is true, as made, and, from the point of view taken, is correct enough; but it is not the entire truth, nor is it the correct point of view from which to form a reasonable and complete judgment. For this purpose it is necessary to recall the condition of things immediately prior to the granting of the concession. At that time the greater portion of the pitch lake had been leased to different parties for various lengths of time, some of them running for nearly fourteen years. Under these leases the rents were quite nominal, being, for the most part, at the rate of £10 per annum for each 5 acres. I have not the exact data within my reach, but I am confident that the total sum realized by the Government for rents under the various leases of the pitch lake did not exceed £250 per annum, or, say, $1,250, which sum, divided by the annual tonnage taken at 30,000, was only about 4 cents per ton. Down to 1885, inclusive, the export duty on crude pitch was 9*d.* per ton; beginning with January, 1886, the export duty was 2*s.*, or 48 cents, per ton.

This was the condition of things when the Government, after gaining the suit before the judicial committee of the privy council, was about to issue licenses to dig from the reserved 5-acre lot at 2*s.* 6*d.* or 3*s.* per ton. This action would have robbed the leaseholders of all inducement to push the trade, and would not have been profitable to the Government, for the reason that the leaseholders, having leases with nearly fourteen years to run, could and would have undersold the Government, offering to intending licensees much better terms than the Government proposed to make. The final result would have been unprofitable alike to the Government, leaseholders, and licensees. In this condition of things, the proposal for the present concession was put forward by Mr. Finlayson, in his letter to your excellency dated February 1, 1887, proposing, in behalf of the leaseholders, to surrender all leases to the Government, and to acquire from the Government an exclusive license for the pitch lake, agreeing to pay therefor the sum of £10,000 yearly in advance, against which shipments were to be made of raw pitch, or the equivalent in *épurée*, of 30,000 tons, being at the rate of $1.60 per ton; all shipments in excess of 30,000 tons to be paid for at the same rate, namely, $1.60 per ton. In order to protect the concessionaires from the competition of deposits known to exist outside of the pitch lake, it was stipulated that the Government was to establish and maintain, during the concession, a duty on export of raw asphalt of 6*s.* 8*d.* per ton. After the legislative council of September 1, 1877, had approved the granting of

the concession substantially upon these terms, certain parties, who had previously sought to defeat the concession entirely, appealed to the secretary of state, claiming that a uniform export duty of 6*s*. 8*d*. would be unfair to them (the owners of private deposits), and asked that the Government, instead of fixing a uniform export duty of $1.60, should fix upon a very much less sum for their benefit. The secretary of state at first contemplated fixing the export duty at 80 cents and the royalty upon the pitch taken by the concessionaires at 80 cents; but the concessionaires claimed that so great a difference would weaken the value of the concession, and would at the same time deprive the Government of income from two sources—on the one hand, from the owners of private pitch, by the proposed reduction of 80 cents per ton in the export duty; and, on the other, from the concessionaires themselves, who, after shipping 30,000 tons, could ship from their own private deposits and thus save a similar amount. A compromise was finally effected, and the export duty was fixed at $1.20 and the royalty at 40 cents. I would here call attention to the fact that the concessionaires have not availed themselves of the opportunity to save this 40 cents per ton on shipments made in excess of 30,000 tons, but have uniformly paid the full sum of $1.60 to the Government, as contemplated in the original proposal made by Mr. Finlayson, and notwithstanding its subsequent modification in the interest of parties opposing the concession. This they have done, not because they did not clearly have the right to ship from their own deposits and save the 40 cents per ton, but because they have been desirous to show the heartiest good will toward the Government, and also because the payment of this 40 cents per ton would go toward the payment of the £140,000, and afterwards of the £28,000, both of which sums must be paid in order that the concessionaires may become entitled to an additional seven years.

* * * * * * *

(2) Another objection to the existing concession was put forward on the ground that the hands of the Government are tied by the present deed, so that it can not vary or revoke the export duty of 5*s*. on crude asphalt, in case it should become desirable to do so by reason of the Government of the United States requiring it, *inter alia*, to be done as a condition precedent to admitting sugar into the United States free of duty. With regard to this objection, I have to submit the following remarks:

(*a*) It is not at all certain that the United States Government will take the action suggested; if not, the objection will prove groundless.

(*b*) In case the United States Government should take such action, why can not the Trinidad Government get over the difficulty, as it did in the case of sugar, "by collecting money, formerly raised in the shape of export tax, by means of a special tax for the purpose?"

(*c*) In case the United States Government should take the action above indicated, and the Trinidad Government should desire to modify the existing deed of concession in the manner above stated or in any other way that will be conservative of the rights and interests of all parties, I can assure your excellency that the concessionaires and the Trinidad Asphalt Company will be quite ready to meet the Government in the matter; but, in dealing with the case, should it arise, the Government will, of course, deal fairly, both as regards the interests of the concessionaires and outside shippers as well as its own.

* * * * * * *

As Mr. Barber, in accounting for profits, refers to the "payments to the former owners of property containing large deposits of pitch outside the pitch lake, the control of which was absolutely essential to the successful promotion of the business"—lands which yield the Trinidad Asphalt Company substantially no income, which, from a schedule before me, would seem to embrace thirty-nine separately described freehold hereditaments and three leasehold premises, and which, according to the price at which asphalt and asphaltic lands on the market are now held, would be worth several

million dollars—I deemed it proper to ask the president of the chamber of commerce (Mr. William Howatson, a member of the firm of A. Cumming & Co.) for an estimate of what this property cost the Trinidad Asphalt Company, and he favored me with the following communication:

TRINIDAD, *June 6, 1892.*

Hon. W. P. PIERCE,
Consul of the United States of America.

SIR: In reply to your inquiry as to the amount the concessionaires of the pitch lake (the Barber company) are believed to have expended in acquiring the ownership or control of lands outside the lake containing deposits of asphalt, I have to inform you, * * *

Altogether, I believe that quite $500,000 has been expended in acquiring the control of outside lands containing asphalt.

My attention has been called to a statement by Mr. George Christall, of New York, in reference to asphalt from outside lands. I beg to state that such asphalt has been shipped to Europe and America for over twenty years past; and within the last four or five years, and since the concession of the lake, the largest shippers of outside asphalt have been Mr. Christall or his agents, dug from lands owned or leased by him or them. Their shipments during the above period and up to as recently as December last have amounted to between 40,000 and 50,000 tons.

I am, etc.,

WM. HOWATSON.

ASPHALT EXPORTS.

I have already shown the general character of the shipments of asphalt, which were comparatively insignificant from 1851 to 1866; and the following tables will give the shipments from that time to the present:

Table showing exports of asphalt from the pitch lake in periods of four years each.

Period.	Year.	Quantity.
		Tons.
4 years preceding regulations	1867	3,285
	1868	2,057
	1869	4,683
	1870	9,029
	Total	19,054
	Average per year	4,763
First period of 4 years after regulations	1871	3,271
	1872	13,580
	1873	7,848
	1874	9,728
	Total	34,427
	Average per year	8,607
Second period of 4 years after regulations	1875	14,742
	1876	15,274
	1877	12,717
	1878	16,190
	Total	58,923
	Average per year	14,731

Table showing exports of asphalt from the pitch lake in periods of four years each—Cont'd.

Period.	Year.	Quantity.
		Tons.
Third period of 4 years after regulations	1879	23,561
	1880	22,927
	1881	26,605
	1882	30,760
	Total	103,853
	Average per year	25,963
Fourth period of 4 years after regulations	1883	39,845
	1884	39,797
	1885	34,874
	1886	*40,000
	Total	154,516
	Average per year	38,629

*Estimated.

Table showing exports of pitch from Trinidad for twenty years ended 1886, taken from harbor master's record.

Year.	America.	Europe.	Total.
	Tons.	*Tons.*	*Tons.*
1867	700	3,027	3,727
1868	200	1,325	1,525
1869	.....	5,297	5,297
1870	2,953	5,857	8,810
1871	828	3,222	4,050
1872	2,144	9,854	11,998
1873	746	6,913	7,659
1874	711	9,204	9,915
1875	1,100	13,632	14,732
1876	3,979	11,715	15,694
1877	1,441	11,576	13,017
Total	14,802	81,622	96,527
1878	5,860	9,926	15,786
1879	9,078	13,633	22,711
1880	7,178	15,614	22,792
1881	8,523	17,753	26,276
1882	15,075	14,878	29,953
1883	24,781	15,025	39,806
1884	19,685	17,913	37,598
1885	15,704	19,040	34,744
1886	25,835	11,298	37,133
Total	131,719	135,080	266,799
Grand total	146,521	216,602	363,326

In neither of these tables is there any attempt to distinguish between raw and *épurée*.

Table showing the exports of Trinidad asphalt from 1885 to 1891, taken from the annual blue books, custom-house records.

ÉPURÉE.

Country.	1885.	1886.	1887.	1888.	1889.	1890.	1891.
	Tons.	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*
United Kingdom	1,658	1,724½	755½	1,603½	1,516	1,535	1,060½
British West Indies	20	0½	8½	2½	8	7	1½
British Guiana	9	13	4	12	8	8	.....
United States	184	.....	2,246	2,494½	2,546	1,441	951
France	992	300	244	925	1,005	714	1,020
Germany	3,868	3,374 7/10	4,737	6,165	5,048	6,406	6,292
Holland	.....	.....	.....	.....	1,062	449	620
French West Indies	.....	3	.....	1	.....	.....	.....
Venezuela	.....	1	.....	.....	.....	.....	.....
British North America	.....	.....	32	32½	80	80	87
Russia	.....	.....	.....	.....	286	.....	.....
Total	6,731	5,416 2/10	8,026 1/10	11,235½	11,559	10,640	10,031½

RAW.

United Kingdom	1,850	1,185	2,995	2,096½	2,286	16,121½	2,562
British West Indies	.....	.....	.....	0½	.....	.....	4
United States	15,573	25,720½	23,937	31,424½	56,503	42,990	75,025½
France	6,076	2,130	3,930	4,167	2,047	5,830	3,670
Germany	4,096	1,220	3,630	3,104	3,078	1,830	3,357
Holland	920	.....	580	.....	1,520	550	300
British North America	.....	.....	.....	.....	1	.....	40
Russia	.....	.....	.....	.....	.....	200	.....
Italy	.....	.....	.....	.....	250	.....	.....
Australia	.....	.....	.....	.....	880	680	1,000
Total	28,505	30,255½	35,072	40,791½	66,565	68,201½	85,958½

NOTE.—There were 20 gallons of liquid shipped to the United States.

Table showing comparative statement of receipts for quarter ended March 31, 1891 and 1892.

Receipts.	1891.			1892.		
	£	*s.*	*d.*	£	*s.*	*d.*
Asphalt export duty	6,876	1	3	8,496	14	8
Royalty	1,954	10	5	1,980	5	0
Total	8,830	11	8	10,476	19	8

The first two tables above were submitted by Mr. Barber in his letter referred to, dated the 1st of August, 1887. By a comparison of the totals of the two tables (the first covering lake pitch and the other the entire shipments of the island), it would seem that over 46,000 tons of land asphalt were shipped during the period named, from 1867 to 1886. But this deduction is evidently unreliable. Tables which set forth, as these do, that during several of the years named more asphalt was shipped from the pitch lake than from the entire island can not be depended on to draw close deductions from. But, taken as a whole, for general information they are sufficiently correct.

As to what percentage of the entire shipments was land pitch and what percentage was lake pitch from 1851 to the present time it is impossible to tell. The facts heretofore stated justify the belief that prior to about 1860 nearly, if not quite, all of the pitch shipped was taken from the pitch banks at La Brea Point; but from about that time to the present the lake has furnished the bulk of the shipments. Mr. Douglas, though evidently a party to the arrangement perfected by Mr. Barber in the winter of 1879–'80, continued to work Point d'Or till June or July, 1882; and I think it quite likely, from the information I have obtained, that the Point d'Or pitch he had collected was not all shipped away before August, 1883, unless he shipped land pitch in this interim from La Cocagne, where it is alleged he continued to dig after he stopped digging at Point d'Or. But this does not exactly agree with the warden's officer's report hereinafter mentioned.

Prior to the arrangement perfected by Mr. Barber in the winter of 1879–'80 pitch was dug at a plantation called Bellevue, by the West India Shipping Company, but I am not informed as to how long a time (if any) that company continued digging there after that arrangement. I notice from the London Shipping Gazette and Lloyd's List of April 22, 1892, that one of the stipulations in the sale of that property by a Mr. Callender, on behalf of the West India Shipping Company, was that he (Callender) was not to ship pitch to the United States. The numerous shipments of Mr. Douglas of Point d'Or pitch, on the other hand, from 1879 to 1882, inclusive (I did not have the harbor master's record examined for any other years), were almost exclusively to Washington, D. C.

It is proper that I should observe here that Mr. Douglas, in petitioning against an increase of the export tax in September, 1885, would seem to convey the idea by the language he used that he had shipped 19,400 tons of asphalt from Point d'Or in the three years from 1882 to 1884. But the evidence seems conclusive that none of the pitch he shipped was dug from Point d'Or after June or July, 1882.

He was charged with obtaining pitch from the lake, which was alleged to be against the special regulations referred to, and the charge was sustained. A letter from the assistant warden (R. Johnstone) at La Brea, dated March 16, 1886, and addressed to the colonial secretary, gives a statement of an employé of the lessees of the lake, withholding his name for prudential reasons, as follows:

Since Mr. Douglas stopped digging at Point d'Or all the asphalt he has exported has been taken from the pitch lake.

The assistant warden adds to this his own statement, as follows:

Having had charge of that district for five years, I am in a position to bear out his statement as regards the ceasing of the digging of pitch on Point d'Or; but, being uncertain as to the year when the digging ceased, I thought it necessary to visit La Brea and gather information from those who were connected with Mr. Douglas when he carried on his business himself. With this view in mind I visited La Brea on Saturday, the 13th, and ascertained that they ceased working at Point d'Or some time between June and July, 1882. This information I got from men who worked for Mr. Douglas up to the last.

It appears from one of the statements of Mr. Barber that he began using Trinidad pitch soon after July, 1878, and that he first purchased supplies from Mr. E. Burgess Warren, who had bought the same from the agents of Mr. Finlayson. I will add that Mr. Finlayson, so far as I am advised, was at that time dealing exclusively in lake pitch. Mr. Barber's statement also shows that in the spring of 1879 he bought from Mr. Douglas a cargo of *épurée* (boiled pitch). He also entered into a contract with Mr. Douglas to furnish him and his associates with pitch for a term of five years, with the option of renewing the contract twice for similar periods, being the entire term of Douglas's lease of Point d'Or. In the spring of 1879 Mr. Barber and his associates, as he states further, took a public letting at Washington city for 104,000 square yards of work "at the lowest price named by several competitors," which they completed. These circumstances, therefore, would strongly indicate that this work was done with land asphalt, as Douglas, up to that time, is believed to have shipped none other.

I think it can be stated with substantial accuracy that very little, if any, land asphalt was shipped to the United States from about August, 1883, to 1888. From 1888 to 1891, inclusive, Messrs. Thomas A. Finlayson & Co. have kept an account, and have kindly furnished me with the following figures:

Table showing the shipments of land asphalt.

Year.	United States.		Other places.	
	Crude.	Épurée.	Crude.	Épurée.
	Tons.	*Tons.*	*Tons.*	*Tons.*
1888	5,620	1,905	600	1
1889	11,327	2,042	.....	.....
1890	16,460	880	.....	.....
1891	10,450	.....	127	.....

The custom-house table of revenue receipts on asphalt will show (considering that the royalty, which is paid on lake asphalt exclusively, is 1*s.* 8*d.* per ton) that the shipments during the March quarters of 1891 and 1892 were as follows:

March quarter—	Land asphalt.	Lake asphalt.
	Tons.	*Tons.*
1891	4,050	23,454
1892	10,223	23,763

LAND VS. LAKE ASPHALT.

In collecting data for the preparation of this report I came across a published statement from Mr. John Cumming to the effect that the land asphalt from Point d'Or and Bellevue was considered very inferior to the pure lake

asphalt; and I also came across another statement from Mr. Thomas A. Finlayson, now deceased (his letter herein of March 31, 1887), as follows:

> The Crown lands in the vicinity of the pitch lake have large deposits of pitch easily obtainable and equal in quality to the lake pitch.

These two statements are particularly interesting, inasmuch as the highly respectable firm of A. Cumming & Co., of which Mr. John Cumming is the senior partner, is now engaged as the trusted agent of Messrs. Carter, Hawley & Co., of New York, in upholding the merits of the land asphalt, while the equally reputable firm of Thomas A. Finlayson & Co. (of which Mr. Thomas A. Finlayson at the time was senior partner) is the trusted agent of the Trinidad Asphalt Company, which is in active competition against the land asphalt. I therefore deemed it proper to address Mr. Cumming and Messrs. Thomas A. Finlayson & Co., calling attention to these public statements, and requesting further information. Both courteously complied with my request, and I now submit their letters.

STATEMENT OF MR. CUMMING.

TRINIDAD, *May 14, 1892.*

Hon. W. P. PIERCE,

Consul of the United States of America.

DEAR SIR: I duly received your favor of the 4th instant, calling my attention to a statement made in a letter in reference to matters connected with the pitch-lake concession, to the effect that the "asphalt to be got from Point d'Or and Bellevue lands is considered very inferior to the pure asphalt dug from the lake, and not only sells at a much lower price, but is always difficult to sell," and asking me for information on what basis or evidence I had made such statement. In full explanation, I think it necessary to state somewhat in detail the circumstances under which that letter was written, the more especially as the inferiority or otherwise of the "land," as compared with the "lake," asphalt was not the question at issue; and my statement was not founded on any information or evidence whatever, but solely from a knowledge that parties interested in selling "lake" asphalt asserted the inferiority of "land" asphalt to get a preference for their own in the market. I beg your patience, therefore, in laying before you the following facts:

(1) I was, from its inception, opposed to the Government granting the concession to the Barber company, not on personal grounds, but because I did not consider it for the best interests of the public that a monopoly should be created of an article—a raw material—that was coming into demand on an enormous scale, and of which the colony possessed an inexhaustible supply. For many years the valuable public property of the pitch lake had been practically monopolized by a few individuals, who paid the Government no adequate rent for it, and who refused to sell to parties outside their "ring." This state of things I endeavored to upset, and for some years carried on an active opposition by correspondence with the Government and otherwise. An appeal was even made to the Queen in council against the action of the Government in adopting my proposals, but after two years a decision adverse to the lessees threw the lake open.

(2) Previous to the concession the different interests in asphalt were: Messrs. Finlayson, Previté & Greig, Field, and Stollmeyer, sole lessees of the lake; John G. Douglas and the West India Shipping Company, of London, shippers of land asphalt, the West India Company owning the Bellevue estate and Mr. Douglas leasing Point d'Or lands from the owner, Mr. Finlayson.

(3) Mr. Douglas dug and shipped asphalt from Point d'Or lands for many years, and had a contract with Mr. Barber, who for years (from 1879 to 1882, on Mr. Barber's own state-

ment) got his whole supply of asphalt from Douglas without any complaint as to quality, and it was dug from Point d'Or.

(4) In 1885 the Government, to get a greater revenue from asphalt, proposed a law increasing the export duty from 18 cents to 60 cents per ton, which was opposed by both interests, and Mr. Douglas presented a petition to the legislature, wherein he set forth that he was lessee of Point d'Or, from which he dug and shipped asphalt, and that during 1882–'84 he had so shipped about 20,000 tons, and he opposed the increased tax as oppressive to his private interests.

(5) It was within my knowledge that the statement in that petition that the 20,000 tons had been dug from the Point d'Or lands was untrue, and that, as a matter of fact, it had been dug from the lake under a private agreement, which I contended was such a violation of the terms of the leases of the lake as would justify the Government in canceling them and taking the property into its own hands for a proper administration by selling to all buyers at a fair price.

(6) My letter, from which you quote, was written with the object of substantiating the untruthfulness of the statement that had been palmed off on the legislature and exposing the irregularities in the leases, and I referred to the alleged inferiority of the Point d'Or asphalt and the difficulty of selling it as a probable reason why Mr. Douglas took lake asphalt, because I knew that the lake lessees used to run down Douglas's asphalt in the market so as to prevent his selling and to get a sale for their own; but I had never seen any comparative analysis of the different asphalts or had any evidence on which to form an opinion.

(7) I may add that, from the further information I have acquired as to the workings of the pitch-lake ring, I am now of opinion that the chief reasons for the lessees giving Douglas asphalt from the lake were the private arrangement forming the monopoly, the much less cost of digging from the lake than from Point d'Or, and the further economy in expenses by having the whole work of digging, carting, and shipping done by the same gang of workmen and under the one management.

(8) As the question of the relative quality of "lake" asphalt and "land" asphalt has been mixed and now forms an important subject of discussion and inquiry in America, perhaps you will pardon my saying a little more on the subject.

(9) As regards asphalt from Point d'Or lands, I have never seen any chemical analysis, and so can hardly form an opinion further than that, looking to the situation and distance in regard to the lake of most of the lands, I think it not unlikely that asphalt from a portion of the property would be found somewhat inferior to asphalt from the lake and from outside lands now being dug that are more favorably situated. But in regard to the asphalt from other outside lands, I have seen numerous analyses and compared them with that of lake asphalt, and have no hesitation in expressing the opinion that, even in the crude state, there is no practical difference, and, if refined by the same process, I do not believe any appreciable difference will be found.

(10) The Barber Paving Company, sole concessionaires of the lake asphalt, are now contending that the "land," or "overflow," asphalt is so inferior in quality as to be unfit to make a good pavement, and are urging its exclusion from all contracts. It is very important and instructive to notice the opinions of the parties forming the concessionaires at other times, when it was not their interest to decry and depreciate land asphalt. The original application for the concession, dated February, 1887, begins with the following conditions:

"First. Government to concede to us the exclusive right to win asphalt from the pitch lake for the term of twenty-one years.

"Second. During the existence of this concession, Government not to grant to any person, firm, or incorporated company the right, under the form of lease, license, or otherwise, to take asphalt from the pitch lake nor from any Crown lands.

"Third. Government to establish and maintain during this concession a duty on export of raw asphalt of 6*s*. 8*d*. ($1.60) per ton, whether such asphalt be taken from the lake or elsewhere."

Lord Knutsford, secretary of state, in a dispatch of March 9, 1887, agreed to the concession, provided the exclusive "right to the lessees to win pitch be limited to the pitch lake." This limitation did not suit the concessionaires, who wrote to the Government (March 31, 1887) as follows:

"I have to request you will inform his excellency that the concession, if so limited, will be practically of no value.

"We proposed, for the annual minimum sum of £10,000, Government should concede to us the exclusive right to win asphalt from the pitch lake for twenty-one years, and during that term should not grant to others the right to take asphalt from the pitch lake, nor from any Crown lands.

"The Crown lands in the vicinity of the lake have large deposits of pitch, easily obtainable and equal in quality to the lake pitch. To concede to us the right to win asphalt from the lake and at the same time to retain the right to allow the public to obtain asphalt from the Crown lands in the nighborhood of the lake is to deprive the concession to us of all value.

"You will observe that we do not ask the right to win asphalt from those lands. * * * We merely ask that in effect Government shall not allow others to do so."*

(11) Owners of outside pitch lands naturally objected to the Government taxing their asphalt $1.60 per ton and giving a monopoly of the lake at the same rate; and Lord Knutsford, recognizing the justice of the objection, proposed that the export duty should be $1.20 on all asphalt, but that the concessionaires should further pay a royalty for the concession of 40 cents per ton, making the lake asphalt cost $1.60. In a letter to the Government (April, 1890) Mr. Barber, in treating for the extension of the concession, says: "If the proposal now pending is adopted, it will be our policy to ship only from the lake, paying the royalty of 40 cents per ton, as well as the export duty of $1.20; otherwise, after taking the first 30,000 tons yearly from the pitch lake it would undoubtedly be for the advantage of the company to ship from Point d'Or. This would effect a saving to the company, and a loss to the Government, of 40 cents out of every $1.60, or one-fourth."

It is to be noted that the Point d'Or lands are now the property of the Barber company.

(12) To sum up the foregoing. For some years Mr. Barber himself got his whole supply of asphalt from Point d'Or, and it is not on record that he then found the quality of "overflow," or "land," asphalt inferior or in any way unfitted for paving purposes, and when he could not get all he desired from the Government, he even held out the threat of again taking from Point d'Or the excess quantity over what he was bound to take from the lake.

Mr. Finlayson, one of the concessionaires, and who, while owner of Point d'Or and exacting a heavy rent for it from his lessee, sought to ruin him by depreciating his asphalt, considered the outside pitch of equal value with the lake, so much so that he refused the concession unless the Government tied up the whole outside pitch lands it controlled. It is clear, therefore, that Messrs. Barber and Finlayson at one time entertained no doubt as to the outside asphalt being practically as good as lake, and it is only their desire to maintain their monopoly that makes them now assert the contrary.

(13) The Barber company and their connections strenuously maintain they have no monopoly, and that lake asphalt is a merchantable article that anyone in America can buy if they will pay the price for it. Contractors for paving work in America will best know whether they can buy asphalt from the Barber Paving Company at a price to enable them to compete on contracts with the Barber company; but I can assert that for over twenty years past it has been impossible to buy lake asphalt here for shipment to America, although the concessionaires do sell it for shipment to Europe. As an instance, on the 9th of March, 1880, my firm of A. Cumming & Co. received a cablegram from their agents in Philadelphia (Messrs. Samuel and William Welsh) asking the price at which we could ship them 1,000 tons of asphalt. My partner called on Mr. Finlayson, the then manager of the lake interests here, and, stating the inquiry, asked him if he would sell and, if so, to name a price. Mr. Finlay-

*A more literal quotation than the above from Mr. Finlayson's letter appears heretofore.

son replied he did not care to sell for shipment to America, but he named a price which I regarded as excessive and prohibitive. We cabled it to Messrs. Welsh, however, and a reply came accepting the contract and instructing us how to ship. On waiting on Mr. Finlayson and telling him the offer was accepted and we would shortly arrange for delivery and shipment, he cooly informed us that he repudiated the offer and would refuse to deliver, as he could not sell for America at any price. We could not enforce the bargain, and had to cable Messrs. Welsh our inability to fulfill the contract. At first the firm they had acted for held us for breach of contract; but ultimately, through the great influence of Messrs. Welsh, we got off by paying all expenses incurred. We have said the concessionaires sell asphalt for shipment to England and the continent of Europe, but buyers are made to understand that if any part of each shipment goes to America they will not be supplied with more.

The supplies of "outside" or "overflow" or "land" pitch are the only obstacles in the way of the Barber company establishing a monopoly of the worst description, and, if the city authorities in America play into the company's hands by refusing such asphalt on contracts, the result will soon be seen in the greatly increased prices that will be demanded for paving work, as the control of the principal material used must necessarily carry with it a control of the work to be done.

You have asked me for an opinion as to the quantity of "outside" asphalt available from undisputed lands. I am aware that there has been much litigation as to the ownership of lands at La Brea having deposits of asphalt between the Crown and individuals; but, so far, the Crown has failed in most cases to establish that lands which had once been granted to private parties have subsequently legally reverted to the Crown, and consequently parties are now in possession and digging. The extent of such lands and also of lands with undisputed title I am not in a position to estimate; but I am aware of quite a number of contracts having been made for delivery of "outside" asphalt in quantities of from 5,000 to 8,000 tons per annum for a period of years, and I presume those parties would not make such contracts unless satisfied they could fulfill them.

I am, etc.,

J. CUMMING.

STATEMENT OF THOMAS A. FINLAYSON & CO.

TRINIDAD, *May 10, 1892.*

The Honorable W. P. PIERCE,

Consul for the United States of America.

SIR: We hope the following particulars and observations may be found of use in the report you inform us you are preparing on the subject of the pitch lake and the trade in asphalt.

The parties who held leases of portions of the pitch lake under the 1871 regulations just previous to the granting of the concession were:

	A.	*R.*	*P.*
Thomas A. Finlayson, J. W. Previté, H. A. Greig	70	3	8
New York and Trinidad Asphalt Company	39	0	28
Conrad F. Stollmeyer	2	1	31
Reserved by the Government	5	0	0
Total	117	1	27

Pressure having been put upon the Government to allow asphalt to be taken by the general public from the 5 acres reserved, Mr. Barber, who at the time largely controlled the New York and Trinidad Asphalt Company, showed, in a letter to the attorney-general dated August 1, 1887, that this would not be for the interest of the Government; and in 1888 a concession was granted to J. W. Previté, H. A. Greig, and the New York and Trinidad Asphalt Company for twenty-one years, during which time they were to have the sole right to take asphalt from the lake, and the Government engaged not to allow asphalt to be dug by other persons from the Crown lands within a radius of 3 miles from the lake. The considera-

tions for the said concession were duly set forth in the deed granting the concession, which bears date July 12, 1888. One of the conditions was the surrendering of the existing leases, in which all concerned joined. The concession was subsequently assigned to the Trinidad Asphalt Company, which was formed for the purpose of working it. Of this company Mr. Barber has been the president since its formation.

On the 28th of July, 1891, a deed was executed by the Government extending the concession for twenty-one years further.

Surrounding the pitch lake there are large tracts of land which contain considerable quantities of asphalt. The fee simple of the greater portion of these lands has been acquired by the Trinidad Asphalt Company. The remaining portion is owned principally by the Government, there being only a small number of village lots legally in the hands of others, some of which belong to Messrs. Turnbull, Stewart & Co. and the Countess of Dundonald. The word "legally" is used because claims of the most flimsy character have been set up by different persons to portions of the lands belonging to the Crown and the Trinidad Asphalt Company, and the lands in question forcibly entered and pitch dug and removed therefrom. In some instances the same piece of land is claimed by several persons, and collisions between the laborers of the various persons claiming have not been unknown. This has resulted in a number of lawsuits, most of which are still pending, and many more will have to be entered by the Government, the most valuable pieces of Crown lands having been literally overrun.

The asphalt dug from lands outside of the lake, and generally described as land asphalt to distinguish it from lake asphalt, is inferior in quality to the latter, being very much drier, more brittle, and full of earth and foreign matter. It is becoming abundantly manifest in America that land asphalt will not make as lasting pavements as that from the lake.

One of the large properties now belonging to the Trinidad Asphalt Company, known as Point d'Or, was formerly held under lease by Mr. J. G. Douglas, who, in 1879, made a contract to supply Mr. Barber with asphalt from this place. Mr. Barber, however, shortly after, in conjunction with Mr. Douglas, made arrangements with the existing lessees of the pitch lake by which he was allowed to get his supplies from the lake. This is significant as showing that so far back as 1880 Mr. Barber recognized the superior value of the lake asphalt for paving purposes.

The statement made by the late Mr. T. A. Finlayson, in his letter to the subintendant of Crown lands, dated March 31, 1887, to which you call our attention, and which is worded thus:

"The Crown lands in the vicinity of the pitch lake have large deposits of pitch easily obtainable and equal in quality to the lake pitch"—

Must be read in connection with the object for which the letter was written. Mr. Finlayson was not discussing the relative value of lake asphalt and land asphalt for paving purposes, and was only concerned to show that the land asphalt was apparently of equal quality for selling purposes, and that in fairness the Crown should not compete with the concessionaires by selling asphalt from the lands outside of the lake. There was therefore no necessity for him to weigh his words very carefully when alluding to the quality of the asphalt. We must observe that Mr. Finlayson had not the practical knowledge of asphalt works which would render his opinion on the subject of quality of any value, and, if here to speak for himself, we are sure he would be the first to point this out. Then it must be remembered that the inferior quality of land asphalt has only been lately demonstrated after years of experience, and that at the time the letter alluded to was written the popular impression was that no difference existed between the two kinds of asphalt. The contrary view has always been maintained by Mr. Charles F. Stollmeyer, who has had practical experience in the use of asphalt, and we have shown that Mr. Barber, very shortly after his connection with Mr. Douglas, made arrangements by which to get lake asphalt instead of the other kind, which he had agreed to take from Mr. Douglas.

We inclose herewith statements showing the total shipments of asphalt from the island from 1867 to 1880 and the shipments of crude asphalt and *épurée* to Europe, America, and

elsewhere from 1881 to 1891, inclusive. We also inclose a list of the cases now pending before the courts in connection with the asphalt business. Besides these, the Crown will sooner or later have to take action in at least fifteen cases in which asphalt has been or is being dug from Crown lands.

It is very difficult to estimate the area of the asphalt lands at La Brea. At a rough calculation there may be about 1,200 acres on which more or less asphalt may be found. Of these about 1,100 belong to or are controlled by the Trinidad Asphalt Company, the Government has about 70 acres, Turnbull, Stewart & Co., control about 12 acres, the Countess of Dundonald has about 6 acres, Benicourt 1 acre, Espinet 1 acre, and there are about 5 acres in small lots. The undisputed land outside that of the Crown and Trinidad Asphalt Company has been partly exhausted, and would probably not yield now more than 6 or 8 tons per annum for four or five years.

We have, etc.,

THOS. A. FINLAYSON & CO.

I also requested Mr. Carl Boos, an American citizen who represents the equally respectable house of Messrs. Harriman & Co., which for some time has been dealing extensively in asphalt, for information as to the price and supply of the commodity, and the courteous reply of that gentleman is here submitted:

TRINIDAD, *May 4, 1892.*

W. P. PIERCE, Esq.,

Consul, United States of America.

SIR: Complying with your request, I beg to state that the only firm here exporting the lake asphalt is Messrs. Thomas A. Finlayson & Co., the agents of the Trinidad Asphalt Company (A. L. Barber, president); that they will on no account and at no price sell a ton of that asphalt to anyone for export to the United States, although they sell it quite freely to anyone for export to Europe at the price of 28*s.* 6*d.* ($6.84), free on board, for crude, and at 58*s.* 6*d.* ($14.04), free on board, for *épurée.*

I have bought and am still buying from them for export to Europe, and am therefore in a position to speak as to these facts.

I may also state as an absolute fact that the prices paid here for export to the United States for land asphalt are considerably higher than the figure at which the lake asphalt may be bought for shipment to Europe (I can not give you the actual figures without disclosing the secrets of others), and this is the reason why you find so little of the land asphalt shipped to Europe. This assertion is also based on actual experience, as my firm (J. N. Harriman & Co.) is likewise a large exporter of land asphalt.

While it would be too speculative a matter for me to estimate the probable yield of the asphalt deposits on private lands, I may say, without fear of contradiction, that several hundred thousand tons might easily be won from them annually for a good number of years, the more so as the deposits are constantly being replenished. I know of several lots where this was proved beyond the possibility of a doubt; in one instance particularly, where a pit 32 feet deep, from which about 8,000 tons had been taken, filled up within five or six months, the ground becoming almost level with the surface.

The private lands I am referring to do not include those owned by either the Crown or the Trinidad Asphalt Company.

I have, etc.,

CARL BOOS.

CONCLUSION.

I have given all the foregoing details, as this report is intended chiefly for the consideration of the various city authorities in the United States who are now considering the relative merits of land and lake asphalt in connection

with the letting of contracts for making streets. With this important matter in view, I thought it best to give too much information rather than too little.

I have tried to collect all the material facts, and, if I have failed, it has not been because I have failed to consult both sides to an active commercial controversy.

Had the Department not called on me to make this report, I should probably not have undertaken to do so, for the reason, if no other, that several gentlemen of fine capabilities, some in the interest of the lake asphalt and some in the interest of land asphalt and some, probably unbiased either way, have been here from the United States investigating the subject.

In conclusion, I beg to formally acknowledge courtesies in the preparation of this report from the colonial authorities and from Mr. J. W. McCarthy and Mr. George Deffentaller, at La Brea.

W. P. PIERCE.
Consul.

UNITED STATES CONSULATE,
Trinidad, June 1, 1892.

JUDGMENT OF CHIEF JUSTICE IN CASE OF STOLLMEYER VS. FERREIRA.

[Inclosure 1 in Consul Pierce's report.—From Public Opinion (Port-of-Spain) of January 12, 1892.]

This is a case where Mr. Stollmeyer, having entered an action against the defendants for damages for digging pitch upon a certain lot of land, seeks for an injunction to restrain the defendants from digging pitch in the meantime. The title or claim of title which Stollmeyer sets up is an alleged thirteen years' possession, a length of time which does not, in this colony, cut off the right of action of anyone asserting a better title; and the defendants allege by their affidavits that the lot belonged to one Accoda, who lived there, some say for twenty, some thirty, years before 1878, and that he only left the lot and the house on it when he fell ill and had to go to town to hospital, and afterwards he was in the house of refuge. This Accoda has left a daughter as his alleged heir at law, and now that pitch has been found to be valuable she has leased the land to the defendants for ten years.

Mr. Stollmeyer does not say in what manner he acquired the land. He shows no deed, and if, as appears prima facie, he simply went and took possession because the sick man had been obliged to leave, his possession can scarcely be looked upon in any very favorable light. But it is upon this alleged possession alone he claims to have an injunction against the person who alleges herself to be the rightful heir, or at least against those to whom she has demised the premises.

If the court granted the injunction, that might, and probably in this case would, practically mean that we are to deprive the person who claims to be the owner of the power of resisting an attempt to deprive her of her patrimony; for, if she is prevented from making use in the meantime of what she claims as her own, it would be almost equivalent to the deciding of the cause on the merits in favor of the plaintiff. I recollect in one case which was brought before me shortly after my arrival here an injunction had been hastily granted against a mortgagor to prevent him picking his own cocoa, and he was thus reduced to absolute penury and deprived of his only available means of showing that he was the victim of a wicked fraud. It may be said that it is the lessee in this case against whom the injunction proceeds and not the owner, but that only makes the matter worse. If it be wrong to deprive an owner of the benefits of his own property merely because his title to it has been challenged

by one who may turn out to be a mere squatter, why should we interfere with the lessee carrying on his business—a perfectly honorable and praiseworthy calling—that of digging pitch, because some one with only, so far as we can see, a squatter's title himself has challenged the owner's title.

Besides, the more the case is that of the lessee the less necessity is there for the injunction, as the lessee may be presumed to be in a better position to pay damages in the event of the action going against him.

There has been much curious argument in connection with these cases upon the principles upon which the old courts of equity granted interlocutory injunctions pending the decision of the cause. But I do not think there is any real divergence of view between the parties or between cases quoted on the one side or the other. Where so much depends upon discretion, circumstances, objects, and balance of convenience it is impossible to put into any precise language the occasions on which a court will grant or withhold an injunction. Only general principles can be enunciated, leaving it to the individual court or judge to apply these principles. Mr. Warner, for the asphalt company, both in this and another case which he argued, was very earnest about this, that in order to support an injunction it was not necessary for the court to decide upon the merits in favor of the plaintiff. There can be no doubt about that if the requisite stress be laid upon the word "decide," for in the case of the Great Western Railway *vs.* the Birmingham and Oxford Junction Railway Company (2 Phillips Reports, p. 597, 1848), which he quoted, Lord Chancellor Cottenham so expressed his view of the law. But the lord chancellor's opinion was carefully balanced. He said:

"It is certain that the court will in many cases interfere and preserve property *in statu quo* during the pendency of a suit in which the rights to it are to be decided, and that without expressing, and often without having the means of forming, any opinion as to such rights. * * * It is true that the court will not so interfere if it thinks there is no real question between the parties; but, seeing that there is a substantial question to be decided, it will preserve the property until such question can be regularly disposed of. In order to support an injunction for such purpose, it is not necessary for the court to decide upon the merits in favor of the plaintiff."

There the injunction was granted, or an appeal against the granting refused; but the next great railway case where the principle of the granting of injunctions was examined was the Shrewsbury and Chester *vs.* the Shrewsbury and Birmingham Railway Company (1 Simons New Reports, p. 410, 1851), when the injunction was refused by Vice-Chancellor Cranworth. "Therefore," says the learned judge, "the first point on which the court has to be satisfied is not, as Lord Cottenham says, positively that the plaintiff is right, but that he has a fair question to raise. But I do not understand Lord Cottenham as meaning to say that in every case where there is a prima facie or probable case suggested the court will interfere. That I can not conceive to be the doctrine of the court. It would be inconsistent with what Lord Eldon says and inconsistent with common sense, for I conceive that even where it is made out that there is a point to be decided which the plaintiff is fairly raising, still there is a further question, namely, whether interim interference on a balance of convenience and inconvenience to the one party and to the other is or is not expedient." And again he adds: "The right of the court must be guided by a discretion not to exercise it where it sees that on the balance of convenience and inconvenience between interim interference and noninterim interference the balance greatly preponderates in favor of the defendant (who applied for the injunction) and against the plaintiff."

These were cases occurring before the courts of chancery at a period antecedent to high courts of justice being constituted. Now all the divisions of the court can grant injunctions, and it may be as well to see what are the principles upon which the courts now act. In the case of the Mogul Steamship Company *vs.* McGregor, Gaw & Co., before the Queen's bench division in 1885, the plaintiffs applied for an injunction against the defendants, who represented a combination, or, as it would be called in America, a trust, for the purpose of driving

the steamships of the plaintiff company out of the China trade—"boycotting" them, as Lord Coleridge called it, adopting a new historical word. At first sight, nothing would seem more illegal or hurtful to the plaintiffs than such a combination, yet the interim injunction was refused for various reasons, all of which are not applicable here; but some are, including:

(1) That if the plaintiffs are right in their contention it will be competent to a jury to award damages proportionate to the extent of the injuries.

(2) That it did not appear to be a case where "irreparable" injury would be done by refusing the injunction. I see that Lord Coleridge uses the very illustration which I ventured to use at the hearing that "if a fine old ornamental tree in a nobleman's park is cut down, the injury is practically irreparable, and can not be compensated in damages."

(3) Then, further, that there were circumstances in the case which did not seem such as to warrant the court in granting the relief sought for.

Now, the ultimate issue of that case shows how much the caution of the court was justified, for, although the acts done, in the opinion both of Lord Coleridge and Lord Justice Fry, in that year of 1885 might have been offenses for which an indictment for conspiracy, and, if an indictment, then an action for conspiracy, would lie, yet opinions have ripened so fast in the contrary direction that we have learned by the mail which has arrived this week that the House of Lords has decided this important case for the defendants, the combination of shipowners, laying down the rule, far reaching and most important in all its bearings for the future, that what is not wrong for one man to do is not wrong for a combination of men to do.

In this case I can not see why we should so favor one party to a suit at the expense of the other. I feel strongly it is an application to cripple an adversary rather than to do anything that is necessary for the preservation of property or the keeping of things *in statu quo* until the trial; and the court ought to be very careful how it allows its great and extensive powers to be made use of by one litigant as a weapon against the other, and especially by the richer litigant for the purpose of tying the hands, as it were, and shutting the mouth of his poorer adversary.

We have heard, moreover, over and over again in the course of these long discussions in the pitch cases, that the object of the Government raising suits and passing ordinances to restrain persons from digging pitch on lands alleged to be Crown lands is to prevent competition in the American market against the pitch of the Trinidad Asphalt Company. This must necessarily, therefore, be the object of the Trinidad Asphalt Company itself, which applies for injunctions in some of the cases; and the person who, by his affidavit, supports the case of the plaintiff here, whether he be a real or nominal plaintiff, is the local manager at La Brea for the Trinidad Asphalt Company.

Now, a court of justice can not permit its process to be used to further interests of that nature. It can not but be clear to everyone that the injunction is the chief end and aim of raising these actions. No one, unless he had such an end in view, would have ventured to come to a court having equitable powers and to say, in effect: "I have no title to my lands in the way of deed or grant or conveyance of any description, and I have not had a sufficiently long possession to enable me to claim a title by possession; but upon that possession, insufficient as it is, I claim an injunction against the ostensible owner, in order that he at least may not make use of the property, and that will prevent him competing with me in the open market in my commercial undertakings." That is, in effect, the position of the plaintiff and what he demands here, and it is not for the protection of such objects that the courts exercise their powers of injunction. For the preservation of property the court will use its power when satisfied that that is the true object of the plaintiff, and when the plaintiff shows at least a prima facie case that he can sustain; but I am not satisfied that the preservation of property is the real object of this application, and prima facie the case of the plaintiff seems a very shadowy one. In my opinion, therefore, the interlocutory injunction must be dissolved.

DEED OF CONCESSION OF PITCH LAKE.

[Inclosure 2 in Consul Pierce's report.]

This deed made the 12th day of July, in the year 1888, between Her Majesty the Queen of the one part and Joseph Weedon Previté of No. 2 Crosby Square, in the city of London, in that part of the United Kingdom of Great Britain and Ireland called England, merchant, Henry Alfred Greig, of London, aforesaid, merchant, and the New York and Trinidad Asphalt Company, being a trading company duly incorporated under the law of the United States and of the State of New York, one of the United States (who and their respective executors, administrators, successors, and assigns are hereinafter called the concessionaires), of the other part. Whereas it has been lately agreed between Her Majesty the Queen and the concessionaires, that Her Majesty should grant to the said concessionaires such license as is hereinafter contained upon the concessionaires surrendering or procuring the surrender of the several leases by the Crown now existing of portions of the parcel of land known as the pitch lake and hereinafter described, save and except a certain lease dated the 11th day of August, 1869, and made between His Excellency Cornelius Hendricksen Kortright, esquire, administrator of the government of the island of Trinidad, of the one part, and Conrad Frederick Stollmeyer of the other part, and upon the concessionaires entering into the covenants, conditions, and stipulations herein contained. And whereas by deed of even date herewith and made between the said Joseph Weedon Previté and Henry Alfred Greig and the New York and Trinidad Asphalt Company of the first part, the Honorable Thomas Alexander Finlayson of the second part, and Her Majesty the Queen of the third part, such surrenders have been duly made. And whereas by a deed dated the 7th day of July, 1869, and made between Conrad Frederick Stollmeyer of the one part and Her Majesty the Queen of the other part, the said lease dated the 11th day of August, 1868, has been surrendered. And whereas the said parcel of land is now vested in Her Majesty absolutely free from all charges, tenancies, easements, or other the like incidents whatsoever. Now this deed witnesseth that in consideration of the premises and of the rent and the royalty hereinafter reserved and of the covenants and agreements by the concessionaires hereinafter contained, Her Majesty the Queen doth hereby grant unto the concessionaires exclusive liberty together or separately to dig, work, search for, and win all pitch, asphaltum oil, petroleum coal, anthracite rock, and asphaltic and bituminous substances and other substances whatsoever, whether animal, vegetable, or mineral, in, upon, or under the said parcel of land known as the pitch lake, containing 114 acres 2 roods 27 perches or thereabouts, and bounded on the north and west by Brighton estate, on the south partly by Brighton estate and partly by a road, and on the east by a road running from Guapo to the village of La Brea, which said parcel of land is particularly described and shown on the plan prefixed to these presents and distinguished by the color red, and all such substances as aforesaid together or separately to make fit for sale and (subject to the reservations and covenants hereinafter contained) to carry away and convert the same to their own use, and within the limits aforesaid for the purposes aforesaid, together or separately, to sink pits, open mines and quarries, dig, bore, delve, and make such erections and buildings and use all such means as shall by them be deemed expedient. Except and always reserved to Her Majesty the Queen, her heirs, successors, agents, servants, workmen, and laborers, liberty to enter upon the said parcel of land with horses, cattle, carts and carriages, and all necessary implements for the purpose of winning and carrying away such asphalt as may be required for the erection, carrying out, or maintenance of the public works of the executive Government of the island of Trinidad and its dependencies, whether the same shall be carried out by such Government or under contracts made by it. To hold and enjoy all and singular the licenses, powers, and privileges hereby granted (subject as aforesaid) unto the concessionaires from the 1st day of February now last past, for the term of fourteen years. Yielding and paying in advance during the said term the certain yearly rent of £10,000 on the 1st day of February in each year (the first of which payments was duly made on the 10th day of February last), in respect of the first 30,000 tons of asphalt (either

raw or converted into *épurée*) to be won and carried away during such year, whether they shall actually be so or not (such quantity to be ascertained according to such regulations as may from time to time be made by the governor or officer then administering the Government of Trinidad in pursuance of the authority conferred on him by the ordinance No. 1 for the year 1888, and intituled "An ordinance to increase the duties payable on asphalt or pitch"): Provided always that out of each such sum of £10,000 Her Majesty's receiver-general in Trinidad or other person duly authorized to receive the same on behalf of Her Majesty, her heirs and successors, shall pay all export duties payable in respect of 30,000 tons of asphalt won from the said pitch lake by the concessionaires, exported by them after payment of such sum of £10,000 and also all other taxes, rates, charges, duties, and assessments whatsoever, which now are or hereafter shall be charged or assessed upon the same. And yielding and paying for every ton of asphalt (over and above the quantity of 30,000 tons) which shall during any one year be won and carried away from the said lake the royalty of 1*s.* 8*d.*, payable on the last day of such year if the same shall not have been exported, but if exported, then upon exportation (and such quantity shall be ascertained in manner aforesaid): Provided always that if in any year or years the concessionaires shall not actually win and carry away the said quantity of 30,000 tons, they may, whenever such deficiency shall happen, win and carry away in any subsequent year or years of the said term or of any term to be granted in pursuance of these presents a sufficient quantity, in excess of the quantity of 30,000 tons, to make up the deficiency without paying any rent or royalty in respect to the same other than the said certain yearly rent of £10,000: Provided always, and these presents are upon this express condition, that the concessionaires shall be at liberty to elect not to pay the yearly rent of £10,000 hereby reserved, and if the same or any part thereof shall be in arrear for sixty days, whether the same shall have been legally demanded or not, the several licenses, powers, and privileges hereby given and every article, clause, matter, and thing herein contained shall absolutely cease and determine on the last of such sixty days, but without prejudice to any claim either of Her Majesty, her heirs and successors, or of the concessionaires arising out of these presents other than a claim for payment of such rent of £10,000, and (this present clause being intended not only for the benefit of Her Majesty, her heirs and successors, but also for the benefit and protection of the concessionaires and each one of them) no expression of intention nor any other act or proceeding whatsoever on the part of Her Majesty, her heirs and successors, or on the part of the concessionaires, shall be necessary for the purpose of effecting such absolute determination, nor shall any act or proceeding on the part of any one of the concessionaires prejudice the right of any other of them to treat such determination as absolute. And further, if during any such period of sixty days or at any time thereafter the concessionaires or any of them shall win or carry away any asphalt from the said lake, they or he shall pay by way of royalty thereon (the quantity to be ascertained in manner aforesaid) the sum of 1*s.* 8*d.*, in the same manner in all respects as is hereinbefore provided, to be paid in respect of asphalt in excess of 30,000 tons, and such winning or carrying away asphalt shall not in any manner affect the election of the concessionaires and of each of them to effect such absolute determination, nor shall it create a tenancy from year to year: Provided always and it is hereby declared that if and whenever any royalties hereby reserved shall be in arrear for sixty days, whether the same shall have been legally demanded or not, or if any, whenever there shall be a breach of any of the covenants and agreements by the concessionaires herein contained, and after Her Majesty, her heirs and successors, shall have given to the concessionaires such provisional notice and such default shall have been made as are hereinafter respectively mentioned, it shall at any time thereafter be lawful for Her Majesty the Queen, her heirs and successors, by notice in writing to be given to the concessionaires, to revoke and determine the several licenses, powers, and privileges hereby given, and immediately after any such notice, every article, clause, matter, and thing herein contained shall absolutely cease and determine, but without prejudice to any claim, either of Her Majesty, her heirs and successors, or of the concessionaires, arising out of these presents other than a claim for payment of any such rent of £10,000 as aforesaid: Provided always that no such notice shall be given

until a provisional notice in writing shall have been given to the concessionaires calling upon them to rectify such matters as aforesaid, and default shall have been made in so doing for six calendar months from the time of such provisional notice being served, and the concessionaires do hereby covenant with Her Majesty, her heirs and successors, that they will for the better and more correctly ascertaining the amount of asphalt which shall be won and carried away from the said lake keep full and true books of account to be open at all times for the inspection and taking copies thereof by such persons on behalf of Her Majesty, her heirs and successors, as may be authorized for the purpose by the governor or officer administering the government of Trinidad for the time being, wherein they will from time to time set down and enter the quantities (as far as the same can be reasonably ascertained at the time of shipping or, if not shipped, of the carrying away of the same of the asphalt won and carried away from the said lake, 1 ton of *épurée* being reckoned as equal to 1½ tons of raw asphalt) and the weight thereof and the vessels with their names and tonnage on which, and the places for which such part of the same as has been shipped shall have been shipped, every such account being verified by a declaration in writing under the hands of the concessionaires or of their agent authorized for that purpose. And will in each year during the said term at the request of such governor or officer as aforesaid supply to him at the shipping place at the village of La Brea aforesaid such quantity of asphalt as may be required for the erection, carrying out, or maintenance of the public works of the executive Government of the island of Trinidad and its dependencies, whether the same shall be carried out by such Government or under contracts made by it, free of all costs save and except the cost of digging and carting the same to the said shipping place. And it is hereby declared that if the concessionaires shall at the expiration of the said term of fourteen years have paid as and for royalties hereby reserved on an export duty to be paid on asphalt in excess of the said annual quantity of 30,000 tons a sum of £28,000 over and above the said certain rent of £10,000 or (if they shall not have so done) shall forthwith pay the sum of £28,000 or such sum as together with what they have already paid shall amount to such sum of £28,000. And if the concessionaires or any or either of them shall be desirous of having a renewal of the licenses, powers, and privileges hereby granted for the further term of seven years and of such desire shall prior to the expiration of the said term of fourteen years give to the governor or officer administering the government of Trinidad for the time being, three calendar months' notice in writing and shall have paid the rents and royalties hereby reserved and have observed and performed the several covenants and agreements herein contained and on the part of the concessionaires to be observed and performed up to the expiration of the said term of fourteen years or shall, on receipt of such a provisional notice as hereinbefore mentioned, be willing to rectify the matters to be mentioned therein within the time hereinbefore provided, then Her Majesty, her heirs and successors, will, upon the request and at the expense of such of the concessionaires as shall give such notice, grant a renewal of such licenses, powers, and privileges for the further term of seven years at the same yearly rents and royalties as are hereby reserved and under and subject to the same covenants, provisos, and agreements as are herein contained other than this present proviso to all the concessionaires who shall have given such notice. And it is hereby declared (1) that so long as the licenses, powers, and privileges hereby granted shall continue in force by virtue of these presents or by virtue of any renewal granted pursuant to these presents no asphalt, pitch, or other asphaltic or bituminous substance shall be won or carried away for export or otherwise by Her Majesty, her heirs or successors (except for the purposes hereinbefore mentioned), or by any other person for any purpose whatsoever from any lands situate within 3 miles of the said parcel of land known as the pitch lake which now are or at any time during the said term or terms shall come into the possession of Her Majesty without the previous consent in writing of the concessionaires; (2) that if during the said term of fourteen years or the said further term of seven years (should such renewal as aforesaid be granted) the concessionaires shall lay down upon the said parcel of land known as the pitch lake or on other lands vested in Her Majesty the Queen and at the

expiration of the said term or further term shall have in use any tramways, piers, breakwaters, or other improvements for convenience in transporting asphalt from the said lake and loading the same upon vessels (such works being of the value of £5,000 at the least) Her Majesty's receiver-general in Trinidad shall repay and refund to the concessionaires the value of such tramways, piers, breakwaters, or other improvements: Provided that if the total amount paid as such royalty shall be less than such value the concessionaires shall not be entitled to more than such total amount: Provided always that if upon the expiration of the said further term of seven years for which the said licenses, powers, and privileges shall have been renewed in manner aforesaid Her Majesty, her heirs and successors, should be graciously pleased to grant in lieu of such payment as aforesaid a further renewal of such licenses, powers, and privileges for a further term of ten years or more, whether upon the same terms and conditions as are contained in these presents or upon other terms and conditions to be hereafter agreed upon, no compensation shall be paid in respect of the same works. And it is hereby expressly declared to be a condition of the execution of these presents and of the hereinbefore mentioned deed of surrender of even date herewith that so long as the said licenses, powers, and privileges shall continue in force under the provisions of these presents, or any such renewals thereof as aforesaid, the duties to be levied upon the export from the island of Trinidad of asphalt in a crude state, liquid asphalt in a crude state, and asphalt boiled (whether the same shall or shall not be exported by the concessionaires) shall be the duties and additional duties made payable by "the asphalt, pitch and petroleum duty ordinance, 1885," and the ordinance No. 1 of the year 1888, intituled "An ordinance to increase the duties payable on asphalt and pitch," and that such duties and additional duties shall be neither increased nor diminished and that no act or ordinance of the said legislative council of Trinidad which shall in any way vary the amount of such duties and additional duties during such period as aforesaid shall receive the royal assent. In witness whereof Her Majesty the Queen hath caused to be affixed hereto the public seal of her said island of Trinidad, and the said Joseph Weedon Previté, Henry Alfred Greig, and the said New York and Trinidad Asphalt Company have respectively executed this deed by their attorney, Thomas Alexander Finlayson, of the town of Port-of-Spain, in the said island of Trinidad, the day and year first above written.

THOS. A. FINLAYSON,
Attorney of Joseph Weedon Previté and of Henry Alfred Greig.

Signed, sealed, and delivered by Thomas Alexander Finlayson as the attorney and for and in the name and as the act and deed of the above-named Joseph Weedon Previté and Henry Alfred Greig in the presence of

A. C. ROSS,
Clerk Legislative Council.

THE NEW YORK AND TRINIDAD ASPHALT COMPANY,
By their attorney, Thos. A. Finlayson.

Signed, sealed, and delivered by Thomas Alexander Finlayson, of Port-of-Spain, as the attorney and for and in the name and as the act and deed of the New York and Trinidad Asphalt Company in the presence of

A. C. ROSS,
Clerk Legislative Council.

Executed before me,

S. H. GATTY,
Barrister at Law.

WILLIAM ROBINSON,
Governor of Trinidad.

EXTENSION OF THE CONCESSION.

[Inclosure 3 in Consul Pierce's report.]

This deed made the 28th day of July, in the year 1891, between Her Majesty the Queen of one part and the Trinidad Asphalt Company, being a trading company duly incorporated under the law of the United States and of the State of New Jersey, one of the United States, having a principal office at No. 1 Broadway in the city, county, and State of New York, one of the United States (who together with their successors and assigns are hereafter called "the company"), of the other part supplemental to a deed dated the 12th day of July, 1888, and made between Her Majesty the Queen of the one part and Joseph Weedon Previté, Henry Alfred Greig, and the New York and Trinidad Asphalt Company (hereinafter called "the concessionaires") of the other part (which deed is hereinafter called "the concession"). Whereas by a deed dated the 12th day of June, 1889, and made between the concessionaires of the one part and the company of the other part, all the licenses, powers, and privileges granted to the concessionaires by the concession were assigned to the company for all the residue then unexpired of the term of fourteen years granted by the concession, and any renewal thereof, subject to the rent and royalties reserved by the concession and under and subject to the covenants, conditions, and provisos in the concession contained, and which thenceforth on the part of the company ought to be observed and performed. And whereas it has been agreed that if the said licenses, powers, and privileges shall be renewed for the term of seven years from the first day of February, 1902, then Her Majesty the Queen will, at the expiration of the said term, grant to the company such a further renewal of the said licenses, powers, and privileges as is hereinafter mentioned: Always provided, nevertheless, that the conditions hereinafter appearing shall have been fulfilled. Now this deed witnesseth that if before the 1st day of February, 1909, in addition to the sum of £10,000, which has been recently invested in the purchase of the sum of £10,363 of 3 per cent India stocks intended to be held upon trusts declared by a deed bearing even date with these presents and made between Her Majesty the Queen of the first part, the company of the second part, and Sir Montagu Frederick Ommanney, Ernest Edward Blake, Joseph Weedon Previté, and Henry Alfred Greig of the third part, and in addition to the minimum sum of £140,000, payable during the term of fourteen years commencing from the 1st day of February, 1888, the sum of £28,000, payable in respect of the renewal of the said licenses, powers, and privileges, for the term of seven years commencing from the 1st day of February, 1902, and the minimum sum of £70,000, payable during the said term of seven years, which three last-mentioned sums together amount to the sum of £238,000, there shall have been during the term of twenty-one years commencing from the first day of February, 1888, paid to Her Majesty any additional sums of money, whether by way of rent, royalties, export duty, or otherwise, in respect of the said licenses, powers, and privileges, or if on the said 1st day of February, 1909, there shall be paid by the company to Her Majesty the Queen any additional sum or sums of money other than the sums so payable as lastly above mentioned, and if the company shall have observed and performed the several covenants and agreements in the concession contained and on the part of the company to be observed and performed up to the said 1st day of February, 1909, or shall on receipt of such a provisional notice as is in the concession mentioned be willing to rectify the matters to be mentioned therein within the time in the concession provided, then Her Majesty the Queen will, upon the request and at the expense of the company, grant to the company a renewal of the said licenses, powers, and privileges at the same yearly rents and royalties as are by the concession reserved and under and subject to the same covenants, provisos, and agreements as are in the concession contained, save as hereinafter provided, for an additional year in respect of each £4,000 of such additional sums of money so paid as aforesaid: Provided always that the term of such renewal shall in no case exceed twenty-one years. And it is hereby declared that the said renewal of the said licenses, powers, and privileges shall for all purposes be deemed to be a renewal thereof granted pursuant to the concession within the meaning thereof: Provided

always, and it is hereby declared, that the provisions of the concession entitling the concessionaires to elect not to pay the yearly rent of £10,000 by the concession reserved and to so determine the concession shall not be applicable to any renewal thereof for any term commencing from the 1st day of February, 1909, granted in pursuance of these presents, and any such term for which the said licenses, powers, and privileges shall be so renewed as aforesaid shall not be determinable by the company for any other reason than that the pitch lake has failed to give an annual supply of 30,000 tons of asphalt, except after one year's notice in writing to expire on the 31st day of January, to be given by the company to the governor or officer administering the government of Trinidad for the time being or on payment in lieu of such notice of a fine of £15,000: Provided also, and it is hereby expressly declared, that if in pursuance of these presents a renewal of the said licenses, powers, and privileges shall be granted for any term of at least ten years, commencing from the first day of February, 1909, no compensation shall be paid to the company in respect of any tramways, piers, breakwaters, or other improvements for convenience in transporting asphalt from the pitch lake and loading the same upon vessels, whether such works shall have been laid down by the company or the concessionaires or either of them, nor shall the company be entitled to any further renewal of the said licenses, powers, and privileges in lieu of the payment of any compensation in respect of the same works.

In witness whereof Her Majesty the Queen hath caused to be affixed hereto the public seal of her said island of Trinidad and the Trinidad Asphalt Company have caused their common seal to be affixed hereto the day and year first above written.

[SEAL.] WILLIAM ROBINSON,
Governor.

[SEAL.] AMZI LORENZO BARBER.
DELOS OLCOTT WICKHAM.
FRANCIS VINTON GREENE,
Secretary.

The common seal of the Trinidad Asphalt Company was hereunto affixed by the authority of the directors of the said company and in the presence of Amzi Lorenzo Barber, of the village of Edgewater, county of Richmond, in the State of New York, in the United States of America, merchant, and Delos Olcott Wickham, of No. 230 West Fifty-ninth street, city of New York, in the State of New York, merchant, two of the directors of the said company, and in the presence of and countersigned by Francis Vinton Greene, of the village of Edgewater, county of Richmond, in the State of New York aforesaid, civil engineer, as secretary of the said company, in the presence of Newton Clark Lyon, of Passaic, county of Passaic, in the State of New Jersey, clerk.

NEWTON CLARK LYON.

THE GUARANTY.

[Inclosure 4 in Consul Pierce's report.]

This deed made the 28th day of July, in the year 1891, between Her Majesty the Queen of the one part and the Trinidad Asphalt Company, being a trading company duly incorporated under the law of the United States and of the State of New Jersey, one of the United States, having a principal office at No. 1 Broadway in the city, county, and State of New York, one of the United States (hereinafter called "the company") of the other part, supplemental to a deed dated the 12th day of July, 1888, and made between Her Majesty the Queen of the one part and Joseph Weedon Previté, Henry Alfred Greig, and the New York and Trinidad Asphalt Company (hereinafter called "the concessionaires") of the other part (which deed is hereinafter called "the concession"). Whereas by a deed dated the 12th day of June, 1889, and made between the concessionaires of the one part and the company of the other

part, all the licenses, powers, and privileges granted to the concessionaires by the concession were assigned to the company for all the residue then unexpired of the term of fourteen years granted by the concession and any renewal thereof, subject to the rent and royalties reserved by the concession and under and subject to the covenants, conditions, and provisos in the concession contained, and which thenceforth on the part of the company ought to be observed and performed. And whereas in consideration of the execution of a deed bearing even date with these presents, and made between Her Majesty the Queen of the one part and the company of the other part, the company have agreed to enter into such covenants as are hereinafter contained. Now this deed witnesseth that in pursuance of the said agreement and in consideration of the premises the company do hereby covenant with Her Majesty the Queen that during the said term of fourteen years there shall be paid to Her Majesty the Queen under the concession, either as rent, royalties, export duty, or otherwise, the minimum sum of £140,000. And it is hereby declared that in calculating the said sum of £140,000 the company shall be credited with all payments already made to Her Majesty the Queen under the concession, whether by the concessionaires or by the company, either as rent, royalties, export duty, or otherwise. And the company do hereby further covenant with Her Majesty the Queen that if before the 1st day of February, 1892, there shall not have been paid the sum of £100,000 towards the said sum of £140,000 calculated as aforesaid, in addition to the sum of £10,000 which has been recently invested in the purchase of the sum of £10,363 3 per cent India stocks, intended to be held upon trusts declared by a deed bearing even date with these presents, and made between Her Majesty the Queen of the first part, the company of the second part, and Sir Montagu Frederick Ommanney, Ernest Edward Blake, Joseph Weedon Previté, and Henry Alfred Greig of the third part, then the company shall on that day execute in favor of Her Majesty the Queen a mortgage in the form set forth in the schedule hereto. And it is hereby declared that the balance of the said sum of £100,000 remaining unpaid may be at any time before the 1st day of February, 1892, paid by the company to Her Majesty the Queen in satisfaction of the covenant lastly hereinbefore contained, and the same shall be credited to the company as against future payments to be by them from time to time made to Her Majesty the Queen under the concession, but shall not in any case be repaid to the company.

In witness whereof Her Majesty the Queen hath caused to be affixed hereto the public seal of her said island of Trinidad and the Trinidad Asphalt Company have caused their common seal to be affixed hereto the day and year first above written.

[SEAL.] WILLIAM ROBINSON,
Governor.

[SEAL.] AMZI LORENZO BARBER.
DELOS OLCOTT WICKHAM.
FRANCIS VINTON GREENE,
Secretary.

The common seal of the Trinidad Asphalt Company was hereunto affixed by the authority of the directors of the said company and in the presence of Amzi Lorenzo Barber, of the village of Edgewater, county of Richmond, in the State of New York, in the United States of America, merchant, and Delos Olcott Wickham, of No. 230 West Fifty-ninth street, city of New York, in the State of New York, merchant, two of the directors of the said company, and in the presence of and countersigned by Francis Vinton Greene, of the village of Edgewater, county of Richmond, in the State of New York aforesaid, civil engineer, as secretary of the said company, in the presence of Newton Clark Lyon, city of Passaic, county of Passaic, in the State of New Jersey, clerk.

NEWTON CLARK LYON.

TRADE AND COMMERCE OF NATAL.

REPORT BY CONSULAR AGENT HOLLIS, OF DURBAN.

IMPORTS.

During the three months ended March 31, 1892, one hundred and thirty-five vessels, of a total tonnage of 146,068 tons, arrived at the Port of Durban, bringing cargoes valued at the total amount of $5,208,254.81. Of this amount, $206,325 worth, or about 4 per cent of the total, came from the United States direct by sailing vessels.

For the nine months ended March 31, 1892, the imports from the United States amounted to $632,353, as against $612,473.36 worth imported during the twelve months ended June 30, 1891, an increase for the nine months over the previous twelve months of about $20,000.

The imports from the United Kingdom during the past nine months amounted to $11,038,531.09, and the imports from that country for the twelve months ended June 30, 1891, to $14,042,631.27.

For the year ended June 30, 1891, exactly 3.42 per cent of the total imports of this colony came from the United States and 79.7 per cent came from England. During the past quarter 3.96 per cent came from the United States and 79.53 per cent from England.

A considerable amount of goods of American production come to this port by steamer via England; but the figures covering these goods can not be obtained, as they are set down in the customs returns as imports from England.

The great bulk of the American imports comes to this port by sailing vessel direct from the United States, and when one considers that it takes an order five weeks to reach New York or Boston; that it takes several weeks to fill the said order, charter the vessel, and load it; and that it takes a sailing vessel all the way from seventy days to four months to reach this port from New York or Boston, it can well be understood how it is that the share of the United States in the Natal trade is not larger than it is. On the other hand, England is in direct steam communication with this port. Five steamship lines run between the two countries, and a sixth company is just starting, while a German line runs monthly steamers from this port to Hamburg, via the east coast and the Suez Canal. If there was a direct line of steamers running between the United States and the various South African ports, the American exporters would be enabled to extend their trade here wonderfully.

A number of staple lines of goods are at present imported exclusively from England and the Continent, and in these lines there is no American competition. Take, for instance, ale and beer, of which $82,000 worth is imported, as shown in the table of imports. If American beer was pushed in this market and could be shipped and forwarded with dispatch, it would

take well, provided it was bottled in the same sized bottles as the English and German beers. American spirits, apothecary ware (drugs, chemicals, perfumes, etc.), plated ware, flour, glassware, firearms, machine tools, and a number of other articles could also be introduced in this market.

Table showing the principal imports into the colony of Natal during the quarter ended March 31, 1892.

Articles.	Value.	Articles.	Value.
Agricultural implements	$26,600.00	Plate and jewelry	$16,500.00
Ale and beer	82,000.00	Preserved and canned provisions and fruit	89,000.00
Apparel and slops	519,000.00	Saddlery and harness	25,000.00
Apothecary ware	200,000.00	Soap	36,000.00
Cabinet and upholstered wares	88,000.00	Spirits of all kinds (71,706 imperial gallons)	140,000.00
Coffee	141,000.00	Stationery	50,000.00
Flour, meal, and bran	219,000.00	Tobacco and cigars	30,000.00
Glass and glassware	40,000.00	Woolen manufactures and goods	160,000.00
Guns and pistols (943 in number)	12,500.00	Wine	33,500.00
Dry goods	420,000.00	All other articles not otherwise specified	1,816,154.81
Iron of all sorts	263,000.00	Total	5,208,254.81
Leather, manufactured	320,000.00		
Machinery	200,000.00		
Oilmens' stores	118,000.00		
Oils of all kinds (278,757 imperial gallons)	73,000.00		

EXPORTS.

During the past quarter this colony exported goods of the total value of $2,206,663.57. About three-fourths of these exports went to England and about one-sixth was exported overland to the interior states. Of wool $21,126.73 worth and $1,623.66 worth of goatskins went to the United States by steamer via England. These amounts are not shown in either of the tables, for the reason that the said tables are taken from the Natal customs returns; and in these returns all goods going to England are classed as exports to England, irrespective of their final destination.

The largest product of the colony exported was wool, to the amount of $994,000 worth; though this is a slight falling off from the amount shipped during the corresponding quarter last year, caused, I am informed, by the farmers holding back their wool in the hope of getting better prices later on.

There has been considerable inquiry from the United States lately for particulars about the Natal wools, and a number of firms here have informed me that they are making arrangements to ship wool to the United States, and that they anticipate a large trade during the coming season. Here, too, the necessity of direct steam communication is realized, for I am also informed that a much larger trade could be done if there was a direct steam line to the United States. At present goods going by steamer from here to the United States have first to go to England and thence transshipped by other steamers to the United States, and freight rates consequently rule high. At present the average rate from Durban (Natal) to New York is 1 cent per pound and 10 per cent primage. The desire for quick dispatch

is such that now shippers will not look at a sailing vessel, and many that would take freights at low rates have to go away in ballast.

Next on the list of exports comes raw sugar, 38,430 cwts., valued at $110,000, having been shipped during the quarter. The greater part of this sugar went to England, though considerable quantities went to Cape Colony and other South African states. Although the sugar industry is not yet out of the experimental stage, enough is raised and refined to supply the wants of the colony and to leave a surplus for export. As the sugar-growers get to better understand the business more sugar is sure to be raised, and in all probability this colony will before long have a good standing as a sugar producing and exporting country.

Coal follows on the list, 14,382 tons, valued at $68,300, having been exported during the quarter. Of this amount 9,000 tons were shipped during the month of March, almost all of which was bunkered for steamship consumption. A number of coal mines are being worked at present in Natal, but the Dundee mine leads them all, both in quality and quantity of output. All the coal exported was from the Dundee mine, as is about nine-tenths of all the coal consumed in the colony. The quality of the coal from this mine is steadily increasing as it is deepened and opened out, and at present writing tests by engineers of this coal under steamship boilers show that its consumption is about equal to Scotch and only about 7 per cent more than the best Welsh. The output of this mine for the month of March was 12,000 tons and for the quarter 31,040 tons. This mine has contracts with sixty-three different steamship companies and owners to coal all their vessels coming to this port. The British and Portuguese Governments make this their principal coaling port in southeast Africa, and during the past quarter three English and two Portuguese men-of-war coaled here. The increase in the coal trade has been so great that the Dundee company has had to put down two more shafts, and are thus enabled to double their output. An extensive electric plant is also being introduced into this mine, and before long all drilling and lighting will be done by electricity. It can safely be said that any vessel, no matter what her capacity is, can be speedily coaled at this port, even if her arrival is unexpected and without notice. Supplying first-class coal at a cost of about $5 per ton, this port bids fair to become the best coaling station in the Indian Ocean.

Next to coal come ox and cow hides, to the number of 52,415, valued at $43,000, followed by 96,297 sheep, calf, and goat skins, valued at $20,000.

The lead, silver, and gold ores shown in the table were mined in the interior states and shipped through this port.

Other articles appear in the table which, although small in amount at present, are sure to come to the front some day as large products of this colony, viz, bark (black wattle) and tea.

One of the smallest items in the table is that of plants and bulbs—$75 worth. This item seems to be almost too small to be worth mentioning,

but it may be of interest, however, to the large number of people in the United States who deal in these articles and to the larger number who are regular purchasers of the same. During the September quarter of 1891 $1,643 worth of bulbs were shipped from this port to the United States, but I have been unable to find out how they were received in the American market. There are many plants and bulbs that are indigenous to this colony only, and many of them are of great beauty. The American florists have a good field here to obtain many rare and unique specimens.

Table showing the principal exports from the colony of Natal during the quarter ended March 31, 1892.

Articles.	Quantity.	Value.
Arrowroot.....cwts...	31	$150.00
Coal.....tons...	14,382	68,300.00
Bark.....packages...	3,723	6,845.00
Coffee.....pounds...	1,270	250.00
Ostrich feathers.....do.....	58	650.00
Flour, meal, etc.....do.....	41,400	480.00
Straw.....cwts...	143	225.00
Fresh fruit.....packages...	818	1,500.00
Maize.....cwts...	2,356	2,300.00
Angora hair.....pounds...	49,435	8,000.00
Ox and cow hides.....number...	52,415	43,000.00
Buck horns.....do.....	30	100.00
Ox and cow horns.....tons...	73	4,250.00
Ivory.....pounds...	2	50.00
Lead ore.....packages...	3,547	17,350.00
Gold quartz.....do.....	23	130.00
Silver ore.....do.....	1,250	6,400.00
Plants and bulbs.....do.....	116	75.00
Calf, sheep, and goat skins.....number...	96,297	20,000.00
Rum.....gallons...	50,819	7,500.00
Raw sugar.....cwts...	38,430	110,000.00
Molasses.....do.....	83	380.00
Tea.....pounds...	25,248	5,500.00
Wool, greasy.....do.....	7,754,780	994,000.00
Other products not otherwise specified.....	.....	414,273.56
Overland in transit.....	.....	314,955.01
Total.....	.....	2,026,663.57

HARBOR WORKS.

During the past quarter the bar depths have steadily increased, and over four-fifths of the steamships and all the sailing vessels arriving at this port have come inside.

The average bar depth at L. W. O. S. T. for the year ended December 31, 1891, was 10 feet 9 inches, and for the past five months (November, 1891, to April, 1892) as follows: November, 12 feet 10¾ inches; December, 13 feet 0½ inch; January, 13 feet 6¾ inches; February, 14 feet; March, 13 feet 11 inches; and for the month of April up to date, 14 feet 2 inches.

The following table shows the names, tonnage (net), and date of the largest vessels brought into the inner harbor during the past quarter:

Name.	Date.	Tons.	Draft.	
			Feet.	*Inches.*
Dumobin Castle (steamship)	Jan. 5	1,778	17	8
Crown	Jan. 8	653	17	6
Umlazi (steamship)	Jan. 19	1,140	17	6
Gipsy Queen	Jan. 31	453	17	0
Strathesk (steamship)	Feb. 10	1,454	19	4
Umkuzi (steamship)	Feb. 13	1,300	18	5
Chupra (steamship)	Feb. 16	1,432	17	6
Inyoni (steamship)	Feb. 20	1,250	17	6
Lucina (steamship)	Mar. 3	1,689	19	9
Umhloti (steamship)	Mar. 3	1,397	18	0

On April 4 the Dutch bark *Thorbecke IV*, 911 tons, drawing 16 feet 8 inches, was brought inside.

SHIPPING.

Table showing number and tonnage of ships entered and declared value of goods imported during quarter ended March 31, 1892.

From—	Vessels entered.		Value of imports.
	No.	Tons.	
United Kingdom	16	17,516	$4,141,805.15
Bombay, via Calcutta	.....	.....	30,206.37
Calcutta	6	4,388	138,378.93
Madras, via Calcutta	.....	.....	2,919.90
Rangoon	2	3,315	14.60
Cape Colony	60	92,506	74,058.39
Mauritius	1	2,029	5,036.82
South Australia	6	2,196	200,144.55
Germany, via Cape Colony	.....	.....	103,593.19
Holland, via Cape Colony	.....	.....	62,086.80
Portugal, via Cape Colony	.....	.....	2,696.04
Sweden	10	4,671	97,831.25
Beira, via Delagoa Bay	.....	.....	452.58
Delagoa Bay	24	15,812	21,290.94
Inhambane	1	50	2,146.13
Madagascar	1	35	452.58
Madeira, via Cape Colony	.....	.....	666.71
Mozambique, via Delagoa Bay	.....	.....	676.44
Quilimane, via Delagoa Bay	.....	.....	24.33
Zanzibar, via Delagoa Bay	.....	.....	92.46
United States	6	2,910	206,325.00
Brazil	2	640	117,355.65
Total	135	146,068	5,208,254.81

Table showing number and tonnage of ships cleared and declared value of goods exported during quarter ended March 31, 1892.

To—	Vessels cleared.		Value of exports.
	No.	Tons.	
United Kingdom	7	8,012	$1,510,138.21
Bombay	1	256	1,270.12
Burmah	1	1,555	3,649.87
Calcutta	3	1,714	749.44
Ceylon	7	10,427	18,322.37
Cochin	1	1,454	2,433.25
Rangoon	2	2,122	1,484.28
Cape Colony	46	65,342	69,235.70
Mauritius	7	9,550	5,392.08
Barbados	8	3,559	111.93
South Australia	1	294	10.46
Germany	.....	.....	1,172.82
Victoria	1	385	26,751.15
Holland	.....	.....	146 00
Celebes	2	1,120	296.85
Guahan	8	3,056	238 46
Beira	1	1,349	16,589.90
Chinde Mouth	.....	.....	885 70
Delagoa Bay	26	17,558	45,073.52
Inhambane	.....	.....	3,985 66
Madagascar	4	7,299	.....
Mozambique	.....	.....	82.73
Quilimane	.....	.....	243.72
United States	2	746	53.53
Brazil	3	3,662	3,260.55
South Seas	3	1,620	121.66
Exported overland in transit	.....	.....	314,955.01
Total	.....	.....	2,026,663.57

W. STANLEY HOLLIS,
Consular Agent.

UNITED STATES CONSULAR AGENCY,
Durban (Natal), April 25, 1892.

AFFAIRS IN GIBRALTAR.

REPORT BY CONSUL SPRAGUE.

The exceptional activity which was ruling in this market a few weeks since in the demand for American tobacco for the purpose of being smuggled over the Spanish lines, as reported in my communication of the 27th of April last, has suddenly ceased with the revival of the previous rigorous measures adopted, thereby rendering the contraband trade at present one of considerable risk and uncertainty. It is also reported that the several officials connected with the Spanish revenue departments, through whose medium it is supposed the late slackness had occurred, have lately been called upon to account for their apparent neglect of duty—not a rare occurrence in the annals of Spanish administration.

Encouraged by the recent activity in the tobacco trade here, considerable supplies of the weed, chiefly Hungarian descriptions, are now reaching this market; though arriving after the fair, they are now being stored to await more favorable opportunities for disposal, which sooner or later may occur.

Important supplies of flour have been regularly arriving at this port direct from New York by British and Italian steamships, and are at present meeting the largest portion of the local wants of this town and neighborhood.

It is probable that the Black Sea ports will soon be reopened for the exportation of wheat to foreign markets, and it is possible that American flour may later on in consequence experience a renewal of the usual foreign competition when the British and French markets may again be placed in a position to supply this and other foreign markets with flour from their own mills.

The crops of cereals in Morocco so far promise well, though the reappearance of the locust causes some anxiety in various parts of that Empire.

In Spain the condition of the crops is not favorable. Heavy rainfalls and serious inundations have caused so much havoc that the outlook for this year's crops is not encouraging.

By the accompanying table it will be perceived that the Italian emigration to the United States still continues unabated and is likely to last throughout the summer months, which speaks unfavorably as regards the condition of the internal affairs of the Kingdom of Italy.

Table showing the number of emigrants on board of steamships that have entered the port of Gibraltar bound for the United States during May, 1892.

Name of vessel.	Date.	Nationality.	From—	Destination.	Number of passengers.
Elysia	May 6	British	Naples	New York	984
Fulda	May 6	German	Genoa	do	763
Giava	May 11	Italian	Sicily	New Orleans	459
Entella	May 11	do	Sicily and Naples	New York	503
India	May 18	British	Naples	do	728
Arno	May 25	Italian	Sicily and Naples	do	672
Werra	May 27	German	Genoa	do	521
California	May 30	British	Sicily and Naples	do	917
Total					5,547

HORATIO J. SPRAGUE,
Consul.

UNITED STATES CONSULATE,
Gibraltar, June 1, 1892.

THE HOP PRODUCT OF GERMANY AND EUROPE.

REPORT BY CONSUL-GENERAL MASON, OF FRANKFORT.

In the last report from this office (August 15) on the condition of the hop vines in Germany and the outlook for the crop of the present year it was stated that the weather during the whole of July and the first half of

August had been exceptionally hot and dry, and that, as a result of these conditions, the hop vines were at that time in many districts shorter and less luxuriant in growth than is usual in an average year. The heat and drought continued unabated until the 31st of August, the temperature ranging as high as 101° and even 104° F. in the shade as far north as Hamburg and Bremen. The 1st of September brought local rains and an abrupt fall in temperature, since which time the weather has been unseasonably cold and cloudy.

As a direct result of the intense and protracted heat, the disease known in Germany as "Kupfer-brand" (red rust) attacked the hops in many localities; but how general or severe the injury has been to the maturing crop can not be accurately known until the close of the harvest, which will be finished in the South German states by the 20th of September, a week or ten days earlier than in ordinary years.

But, although the precise extent of this damage can not yet be precisely stated, the fact is recognized that both the quantity and quality of this year's product will be affected thereby and will fall below the most accurate estimates of twenty days ago, at which time it was hoped that more abundant rains during the last month before harvest would secure a crop nearly up to the average in quantity and of uniformly excellent quality. The condition of the hop market, particularly in England and the United States, has given the question of the European product extraordinary interest at the present moment, and there is herewith submitted a schedule of the net European hop crop for the current year. The best authorities still differ slightly in their predictions, for in such matters the opinions of experts are controlled to some extent by their interests; but, in so far as official returns and the best commercial judgment can be collated and harmonized, they indicate that the product of the several hop-producing countries of Europe will be approximately as follows, the statistics being in metric pounds, or half kilograms, which are one-tenth greater than American pounds.

Country.	Quantity.	Country.	Quantity.
Germany:	*Met. lbs.*		*Met. lbs.*
Bavaria	22,500,000	Austria-Hungary	15,500,000
Würtemberg	6,000,000	Belgium	9,000,000
Baden	5,000,000	France	5,000,000
Alsace-Lorraine	6,500,000	Russia	2,500,000
Prussia	3,500,000	Great Britain	*36,000,000
Total for Germany	43,500,000	Total for Europe	†101,500,000

*Equal to 40,000,000 English pounds. †101,500 gross tons.

The hop product of Germany has fluctuated from year to year during the past decade between a minimum crop of 36,296,000 pounds in 1882 and a maximum crop of 71,565,000 pounds in 1889, the annual average for the ten years being 52,542,100 pounds. The foregoing estimate, therefore, reckons the German crop of 1892 at 3,300,000 pounds less than that of 1891 and 9,042,100 pounds below the average of the past ten years.

Official statistics now show that there has been an increase of 155 acres in the area of land under hop culture in Baden and a decrease of 340 acres in Prussia and 1,921 acres in Würtemberg, while the area of culture in Bavaria and Alsace-Lorraine remains practically unchanged. There has been, therefore, a reduction of hop-growing land in the whole of Germany from 109,825 acres in 1891 to 107,719 acres in 1892.

FRANK H. MASON,
Consul-General.

UNITED STATES CONSULATE-GENERAL,
Frankfort, September 10, 1892.

RAILWAYS, HIGHWAYS, AND BRIDGES IN SPAIN.

REPORT BY CONSUL BOWEN, OF BARCELONA.

RAILWAYS.

There are now 7,000 kilometers of railway in process of construction in Spain. The greatest number of kilometers built during any one year was 764 in 1860, 837 in 1863, and 766 in 1865.

Almeria, Soria, and Teruel are the only provincial capitals that have not yet been brought into connection with the general railway system of Spain, but nearly two-thirds of the principal towns of the various districts of the forty-nine provinces of Spain are also isolated. A still more remarkable fact is that only one-third of the fifty-two strategic points that could be used to defend Spanish territory are at present provided with railway communication.

The total number of locomotives employed in said general railway system is 1,200, the number of passenger cars is 4,000, and the number of freight cars is 16,000.

HIGHWAYS.

Besides the 18,190 kilometers of highroads that Spain now has, 4,000 kilometers are in process of construction and plans for 1,000 kilometers more have been approved. It is intended to have the general highroad system ultimately consist of 35,942 kilometers.

BRIDGES.

The number of bridges possessed by Spain is as follows: Stone, 1,062; iron, 35; and wood, 72. The number of each of these three classes now in process of construction is 98, 24, and 3, respectively.

HERBERT W. BOWEN,
Consul.

UNITED STATES CONSULATE,
Barcelona, June 3, 1892.

STAVES IN LIEGE.

REPORT BY CONSUL DANFORTH.

It is very difficult to give an approximate estimate of the number and value of staves used in this consular district. The manufacturing of casks, tuns, and barrels is so scattered in small workshops that it is impossible to have a complete or even an approximate knowledge of the amount manufactured. Besides this, I find that a great number of these casks and barrels come here from the province of Antwerp, most of the wood being imported to that seaport. Sweden, Norway, and Russia send all by sea. The larger part from the Netherlands and even a part of Germany's shipments come by way of Antwerp.

The staves most in demand are for beer casks, and are all of oak.

Most of the staves used here come from the Belgian province of Luxembourg, from the provinces of Liege and Namur, and from the French Ardennes.

The following are the sizes of the staves and heads most used:

Description.	Length.	Thickness.	Width.
	Inches.	*Inches.*	*Inches.*
Staves	27¾	1 3/10	2½ to 9
Do	22	1 3/10	2½ to 9
Heads	17 3/10	1½	2½ to 9
Do	14⅜	1½	2½ to 9

The staves of barrels for zinc paint, nails, etc., are made of beech. They run from 12 to 37½ inches in length, one-fifth of an inch to half an inch thick, and uniformly 4 inches in width.

The staves most in demand are 35 inches long, one-third of an inch thick, and 4 inches in width, worth $20 per 1,000 pieces, free at Liege; and 37½ inches long, half an inch thick, and 4 inches wide, worth $21 per 1,000 pieces, free at Liege.

These staves are sawed to a given length and roughly cut with the hatchet at the forest. They must be of very dry wood and without knots. The finishing is done at the cooperages.

Staves for the larger beer casks, called "full tuns," are 26 to 27⅜ inches. The smaller, or "half tuns," are 20¾ to 22 inches. The staves of the "heads" are 17 to 17¾ inches long, 3¾ to 6½ inches wide, and 1 1/10 to 1⅝ inches thick.

The most desirable timber for these staves is oak grown in cold countries and on poor soil. The slow growth gives a firm, close fiber.

The trade is local and comparatively unimportant.

American staves are not used, as it is claimed that the wood is too soft and porous for beer casks. Could not American manufacturers convince them to the contrary?

The total importation of wood of all kinds into Belgium during 1889 was of the value of 79,043,765 francs, of which 65,000,497 francs' worth remained in the country.

In these sums the United States figure for a total amount of 2,712,698 francs, of which 1,518,749 francs' worth remained in Belgium.

The most important amount is furnished by Sweden and Norway, as Germany, France, and Russia (which import in about equal quantities) do not together reach in value or quantity what comes from the Scandinavian peninsula.

JAMES R. DANFORTH,
Consul.

UNITED STATES CONSULATE,
Liege, May 5, 1892.

SAN BLAS COAST AND PEOPLE.

REPORT BY MINISTER ABBOTT, OF BOGOTÁ.

I have the honor to transmit herewith a free translation of so much of the last annual report of the captain of the port of Colon, made to the minister of finance, as relates to the San Blas coast.

The description of the inhabitants, who are uncivilized Indians, is very interesting.

The recommendations as to commerce are of peculiar interest to those of our merchants who desire to continue their trade in those regions, and are also important to the Government, in view of the past complications on account of alleged smuggling on the part of citizens of the United States.

It is extremely difficult to regulate the San Blas trade to the satisfaction of both this Government and the owners of vessels. The former is and always has been disposed to be as reasonable and complacent as possible. The latter have not always appreciated the difficulties of the situation, and those few who wish to carry on their business unrestricted by customs laws have not exhibited any ardent desire to do so.

If any changes are effected by the next Congress they will be duly reported.

JOHN T. ABBOTT,
Minister.

UNITED STATES LEGATION,
Bogotá, June 5, 1892.

GULF OF SAN BLAS.

[Inclosure in Minister Abbott's report.—Translation.]

PORTS.

The principal ports are Chucumbali, Cardi, Rio Cidra, Rio de Azucar, Rio Diablo, Playón Grande, Rio de Perro, Playón Chico, Rio Mone, Isla de Paloma, Aguilagandi, Napagandi, Rio Banana, Rio Mosquito, Putugandi, Sasardi, Caledonia, Carreto, Esmachicuna, Armila, Pala, and Cabo Tiburón.

GOVERNMENT.

Each village has its "caçique," but to-day that of Sasardi is considered the chief to whom all the others render obedience. The people are very submissive and respectful to each of their "caçiques."

Every year a congress is held, the place of meeting being changed each year among the different tribes.

When a matter of special consequence is to be considered, it is done at Rio Diablo, that being deemed the most important point.

Each village has its "ina," "tulete," "milá," and "arzoquete," words by which they call the physician or healer, soothsayer, and priest of each tribe.

CUSTOMS.

Their principal domestic feasts are: On the third day after the birth of a son, when his nose is pierced for a ring; when a girl reaches the age of puberty; and, lastly, when she marries, which is the most significant event in the family history.

The girls' hair is allowed to grow from birth until they reach their full development, when it is cut as a sign that they are of a marriageable age.

The Indian boy after marriage becomes the servant of his father-in-law, and must submit in all things to his will as a son until emancipated by having a marriageable daughter, when he sets up his own home and becomes thenceforth the master of his son-in-law.

Two days before a marriage ceremony the women conceal all weapons belonging to the men, in order to avoid any serious consequences from the free use of the spirituous liquor which they call "chicha."

The men are very jealous of their women, and in case of war or other grave danger, above all, if they think that they are to be deprived of their lands, their first step is to kill their wives and children. Happily, this has not as yet come to pass, but their strict ideas might easily carry them to that extreme should an attempt be some day made to take forcible possession of their territory.

They are extremely superstitious, and give great significance to dreams, considering them, like insanity, as the work of evil spirits. When any one dreams he tells his dream to the soothsayer, who interprets it to his liking and pronounces the death penalty, as he also does in cases of insanity.

Recently, in Rio Diablo, an unhappy woman who had lost her reason was condemned by the caçique to be burned, and in a place outside the village a pyre as high as a man was erected of combustible material. The woman was enveloped in a blanket, placed on the pyre, and saturated with kerosene oil. The fire was set in the presence of the tribe and of the family of the victim, who contemplated the sad scene while uttering loud groans.

The women, in the presence of the caçique, carry the cargo to the ships, and are very well treated by the crews. The men, as a rule, are excellent sailors from the age of 8 years.

They permit no foreigner (and for them all are foreigners not born there) to establish dwelling houses or stores in their territory, and to such an extreme do they carry their firmness in this that they will not even allow anyone to sleep in their villages. They wish to exercise absolute dominion, even to the sea which washes their shores. They are skillful in trade, are honest and thrifty.

LANGUAGE.

They understand English and make use of it in their relations with North Americans, who, by frequent intercourse with them, have accustomed them to their language. They moreover have their own dialect, in which all the natives of the country express themselves.

They have but little regard for Colombians, whom they call Spaniards, from the fact that they use the Castilian tongue. There are not above a dozen who understand the Spanish language. Traffic with Puerto Bello is constant, and on a less scale with Colon.

RELIGION.

They have the idea of divinity, and represent God by figures of wood. When they die they believe that they go directly to repose in the bosom of the eternal. Each family makes and maintains its own burial place, which consists of a very neat palm hut. There they dig the grave and erect a stake in each end of it, from which they hang a hammock to receive the body, with which they place a diminutive boat and the arrows, jewels, etc., of the dead, in order that God may see the implements with which they maintain themselves here on earth. These graves are covered with boards, with earth on top heaped up to form an arch. The grave is never disturbed, and when the burial place is full a new one is made.

POPULATION.

By the official census of 1870 the territory of San Blas had 9,469 inhabitants, but the population is supposed to approximate 20,000.

HEALTH.

Excepting the endemic diseases which prevail among us, the only epidemic of which we have knowledge has been the smallpox. This has occurred at relatively long intervals, and it has not as yet been possible to combat it by the introduction of vaccine.

AGRICULTURE.

Forty years ago the cocoanut palm grew almost spontaneously and belonged to the community, the fruit selling at from $4 to $5 per thousand. To-day this price has increased to $25, and at times reached $30, since the cocoanuts of San Blas are more esteemed in the United States than those of any other origin, for which reason they sell for some $5 per thousand more than others.

At present the Indians cultivate this valuable tree after it is 8 years old, and the property is now individual. They also sow cacao and coffee; but the first, either through their ignorance of cultivation or because of a pest which has of late attacked the plants, has not produced good results, and they sow so little of the latter that it is hardly sufficient for the consumption, notwithstanding the opinion of those versed in such matters is that the lands are adapted for the cultivation of both.

IMPORTATION.

The annual imports to this coast are estimated at about $200,000 in silver, of 835 milesimos.

EXPORTATIONS.

The exports are estimated at about $250,000 in the same money, and consist of 7,000,000 cocoanuts, 4,000 kilograms of tortoise shell, and 5,000,000 kilograms of vegetable ivory, products almost all of which go directly to foreign countries in the boats engaged in that commerce.

PILOTS.

Every boat going to trade at the gulf must take a pilot at Puerto Bello, who is generally paid $2.50, and sometimes $3, per day during the trip. In my opinion, these pilots should be appointed by the Government, in order that they may be invested with more authority.

RECOMMENDATIONS.

From all these data, which I have collected with great care, to the end that all, and especially the Government, may be impressed with the importance of the Gulf of San Blas, it is evident that something ought to be done for the benefit of these Indians and toward shedding the light of civilization where until now there have existed only the dark shadows of ignorance.

As a beginning, it seems to me that nothing better can be done than to send missionaries to these wild regions. This would be, at the least, a duty to humanity, even if it shall not prove a positive advantage to the country.

This territory, which is a part of the department of Panama, is entirely under the control of the custom-house of Cartagena in respect of its commerce, according to decree 986 of October 26 of this year reforming decree 867 of Septemher 25 of the same year. This decree, in order to be effective, makes it necessary for the Government to appoint a special officer, with his residence at Puerto Bello, to guard against the smuggling of merchandise into the Gulf of San Blas, which is generally carried on in small boats. This officer might well be a corporal of the custom-house force, or the matter might be entrusted to the mayor of Puerto Bello, an official who has no salary whatever, but to whom a fair remuneration might be paid as a stimulus to the faithful performance of his duty. At present, without this position for a corporal and with the mayor without salary, how can any real interest be taken in preventing smuggling when that is the chief industry of the town and in leaving the occupations which give its people subsistence to engage in a business which would bring in nothing but curses?

Now, then, although the decree just cited provides that the gunboat *La Popa* shall be always vigilant to prevent trade with the said coast, except under the legal restrictions, this ought not to be a dead letter, but should be carried into effect by the extension of the boat's trips, both in coming and going, to Puerto Bello and this port.

On touching here the captain or commandant should place himself under the orders of this office, in order to receive its instructions, since no one better than its chief can be thoroughly conversant with what is passing in the neighboring coasts.

I call attention to this because, in the various trips which the said gunboat has made to this port, its captain has not even advised his arrival, which may be due to the fact that his superior has not so instructed him or that no legal requirement therefor exists.

If the decree authorized by your office, regulating the trade with the said gulf, does not, after due trial, yield the beneficial results contemplated (for it may be that trade in merchandise carried from Cartagena to the gulf may be nothing), in my opinion, in order that the Government and commerce may obtain any advantage, it should be so reformed as to prohibit absolutely trade with the said gulf, so as to force the Indians to go to the ports of the department for the supplies they need and to bring for sale all their products to this port for exportation. This would render it practicable to ascertain the real exports of the department and would bring the Indians in constant relations with Colombians.

If this be not deemed expedient, then it should be provided that the only ports through which this trade may be carried on shall be Cartagena and Colon, and that the merchandise which may go from the latter port shall be subject to an increase of 25 per cent ad valorem over the current prices in this market, and that the formalites for this trade shall be those now in force by virtue of the said decree No. 867.

After mature examination of this matter, I have come to the conclusion that, if the means now in force give a poor result, one of these two methods which I have proposed should be selected for the accomplishment of the desired end.

FERTILIZERS IN THE BAHAMAS.

REPORT BY CONSUL McLAIN, OF NASSAU.

In compliance with directions contained in the Department's circular of June 2, 1892, relative to trade in fertilizers in my district, I would report as follows:

There is no importation of fertilizers into this colony from Europe. A considerable quantity of guano, or cave earth—a rich bat deposit found in

caves on the out islands—exists in this colony. Prior to 1885 from $12,000 to $15,000 worth of this deposit was exported annually, most of it going to the United States to be mixed with other fertilizers. Since 1885 the policy of the colonial government being opposed to the removal of any fertilizers from the islands, exportations of this guano have been prohibited by law, with a view to encourage its use by local agriculturists. It is not, however, much used, being, perhaps, too rich in its natural state.

Within the last three or four years, however, a demand has arisen for fertilizers in the cultivation of pineapples, and foreign fertilizers have been introduced with excellent results, the fruit being larger and of better flavor, and old, worn fields developing new life and vigor.

These fertilizers, I am happy to say, come entirely from the United States, and the trade is rapidly increasing. In 1891 fertilizers to the amount of 2,175 barrels, worth about $12,000, were imported from the United States and used during the year. There will probably be a decided increase in the amount imported in 1892.

I do not anticipate that our manufacturers of fertilizers will meet with any European competition here. We have the trade already, conditions are all in our favor, and we are going to keep it, and increase it.

THOS. J. McLAIN,
Consul.

UNITED STATES CONSULATE,
Nassau, June 24, 1892.

PERUVIAN RAMIE.

REPORT BY SECRETARY OF LEGATION NEILL, OF LIMA.

Permit me to transmit to the Department a sample of ramie* grown on the estate of Señor Pinillos—La Legna, near Lima—and worked through a machine arranged here without any preparation whatever.

There are at present some 40 acres of ramie planted at the hacienda of La Legna, but this can be doubled in a very short time. I have been able to obtain the following data from an English gentleman of this city, Mr. Norman Evans, who is interested in the growing and manufacture of this valuable fiber plant.

The plant gives four or five crops per annum, and they calculate to obtain 10 tons of clear fiber per acre per annum. From £28 to £30 per ton has been offered for it.

Mr. P. D. G. Clark, curator of the Royal Botanic Gardens, Ceylon, who was lately here as agricultural expert of the Peruvian Corporation of London, says in his report to the corporation:

I have also been shown some specimens of rhea, or China grass (*Bohmeria nivea*), which was the finest sample of this valuable fiber plant that I had ever seen. It measured 9¾ feet long, and had also the appearance of having been cut too soon for commercial purposes.

*Sample sent to the Agricultural Department.

These samples were shown to Mr. Clark by Señor Pinillos.

The machine, having been made here by unskilled hands, is necessarily imperfect, and if these gentlemen could obtain proper machinery very much better results could be obtained.

RICHARD R. NEILL,
Secretary of Legation.

UNITED STATES LEGATION,
Lima, May 28, 1892.

TRADE AND COMMERCE OF PALERMO.

REPORT BY CONSUL PUGH.

Since my last general report on the trade and commerce of Palermo there has been no material alteration or especial feature.

IMPORTS.

There has been an increase in imports of $1,003,836.23, of which the sum of $93,629.44 was the increase on the part of the United States; but, with the exception of England, the countries of the triple alliance appear to have profited most in the increase. While the imports have increased, the exports have decreased $1,202,636.55, indicating a rather unhealthy business condition.

The principal articles exported from Palermo during the last year amounted in value to $5,180,408.05, a total decrease below that of the preceding year of $1,202,636.55, while the decrease to the United States was $1,250,197.30, a sum even larger than the total decrease. This latter was due largely to the immense damage to both trees and fruit by severe frosts, snow, and hailstorms during the winter of 1890–'91.

The principal articles imported into Palermo during the same period amounted in value to $5,023,440.42, upon which duty was collected amounting to $1,021,139.92. The largest item of importation from the United States was petroleum, and, while Italy does not produce a single gallon of petroleum, she imposes upon this article an import duty of about 200 per cent. On an importation of petroleum to the value of $183,251.77 she collected a duty of $343,208.40.

In a former report mention was made of what appears to be a discrimination against the United States in the enormous import duty levied upon petroleum, coming principally from the United States, and in the export duty on brimstone and sumac, of the former of which the United States takes about double that of any other country and of the latter a very large proportion.

Table showing the value of the principal articles imported into Palermo during the year 1891.

Articles.	From—						Total.	Duty collected.
	Austria.	England.	France.	Germany.	United States.	Other countries.		
Acid and candles, stearic	$12,016.00	$15,483.00	$2,018.00	$5,120.00	.....	$3,160.00	$37,797.00	$3,287.60
Acid, sulphuric	.....	.....	1,994.20	.....	.....	.....	1,994.20	129.60
Barley and Indian corn	29,400.00	.....	.....	.....	.....	27,800.00	57,200.00	5,300.00
Beer	1,576.80	38.60	200.00	7,232.80	.....	23.60	9,071.80	447.23
Brass, bronze, and nickel, and manufactures thereof	12,962.20	36,201.80	11,633.40	18,848.60	.....	9,200.00	88,846.00	7,999.94
Cattle	.....	.....	.....	.....	.....	55,160.60	55,160.60	4,449.00
Cement	.....	7,747.95	17,503.62	2,630.80	.....	.....	27,882.37	4,730.20
Cheese and eggs	900.00	.....	.....	2,047.80	.....	45,028.20	47,976.00	2,894.40
Coal	.....	567,199.00	.....	.....	.....	.....	567,199.00	.....
Coffee	710.20	110,990.20	2,425.60	8,235.40	$55.60	55.20	122,472.20	74,945.80
Colors and coloring matter	96.80	2,611.40	609.00	952.40	.....	1,119.20	5,388.80	473.00
Corn	.....	.....	.....	.....	.....	310,000.00	310,000.00	76,652.97
Cotton	104.00	13,482.20	134.00	839.00	.....	31.00	14,590.20	2,562.80
Cotton tissue	16,937.60	429,004.20	8,498.40	57,137.80	2,826.20	26,295.40	540,699.60	140,748.00
Decorated earthenware	7,492.60	4,494.80	5,042.60	9,003.40	.....	.....	26,033.40	4,816.20
Essence of orange	164.00	.....	52.00	1,664.20	.....	.....	1,880.20	282.80
Fish, dry and salt	.....	6,302.40	.....	.....	868.40	7,261.40	14,432.20	3,945.12
Furniture	19,499.00	7,436.80	5,872.80	4,882.20	1,530.80	55.00	39,276.60	2,723.80
Glass and articles thereof	13,725.40	3,145.80	13,539.40	19,838.80	.....	23,422.80	73,672.20	15,664.58
Guns, revolvers, and parts thereof	.....	.....	4,816.20	9,000.00	7,000.00	13,000.00	33,816.20	5,212.00
Hats, felt, for men	360.00	9,124.00	1,000.00	500.00	.....	.....	10,984.00	1,380.00
Hemp, linen, jute, and other fibrous vegetables, excluding cotton	.....	4,360.20	9,653.60	2,156.40	.....	.....	16,170.20	.....
Hempen rope	.....	6,942.60	1,330.80	1,365.20	1,022.40	476.60	11,137.60	1,280.80
Hempen tissue	786.00	13,499.20	1,278.60	4,560.00	.....	2,338.60	22,462.40	4,277.80
Hides and skins:								
Raw	1,085.14	15,717.00	7,781.02	3,348.03	7,564.04	13,237.00	48,732.23	.....
Manufactured	.....	15,535.00	20,000,00	67,413.20	.....	.....	102,948.20	12,854.76
India rubber and articles thereof	.....	1,475.00	1,000.00	4,040.00	.....	12,080.00	18,595.00	1,445.00
Iron	7,360.00	129,066.60	31,073.80	25,625.40	1,337.00	29,661.60	224,124.40	74,845.00
Cast	6,200.00	34,808.40	1,125.60	3,640.00	7,000.00	851.80	53,625.80	11,066.00

Ivory and mother-of-pearl	30,840.00	19,280.00	16,020.00	13,800.00	.....	.....	79,940.00	4,036.20
Lard	.....	38,240.00	.....	.....	21,715.40	44,174.80	104,130.20	5,774.00
Medicines	201.40	142.40	461.00	464.40	.....	295.80	1,565.00	273.82
Mercery	20,080.00	6,160.10	20,040.15	28,800.02	2,040.00	.....	77,120.27	10,437,80
Musical instruments	5,080.00	240.00	2,680.00	12,650.00	.....	.....	20,650.00	3,132.00
Oats	13,600.00	.....	.....	.....	.....	19,600.00	33,200.00	7,617.15
Oils, mineral (petroleum)	4,228.45	28,146.40	364.12	269.20	143,915.60	6,328.00	183,251.77	343,208.40
Paper of any kind	.....	749.60	6,405.40	6,854.40	8.40	2,460.80	16,478.60	4,791.23
Perfumery	105.60	448.80	1,935.60	628.80	.....	.....	3,118.80	519.80
Physical, optical, and chemical instruments	5,400.00	10,155.40	2,410.00	9,600.00	3,170.20	1,600.00	32,335.60	1,810.60
Plumes, ornamental	30,840.00	19,280.00	16,020.00	13,800.00	.....	.....	79,940.00	4,036.26
Potassa and soda, caustic	.....	14,808.60	.....	623.63	.....	3,168.24	18,600.47	347.05
Poultry	.....	.....	.....	.....	.....	15,368.80	15,368.80	568.74
Seeds:								
Oleaginous	.....	.....	.....	.....	.....	2,180.00	2,180.00	220.00
Not oleaginous	18,000.00	.....	.....	.....	.....	2,100.00	20,100.00	.....
Sewing machines and parts thereof	1,211.40	80,314.20	4,419.14	6,683.22	.....	2,960.00	95,587.96	12,168.05
Silk tissue	10,367.20	21,806.20	171,648.80	102,971.00	481.00	6,008.80	313,283.00	33,895.80
Soap, common and perfumed	1,179.80	1,851.40	850.20	683.00	17.60	63.40	4,645.40	621.00
Spirits and liquors	2,411.65	388.34	6,105.40	205.32	4.20	497.10	9,612.01	2,421.80
Starch	.....	4,073.80	.....	.....	.....	5,000.00	9,073.80	1,617.10
Sugar	19.80	620.20	.....	.....	52.60	11.60	704.20	1,625.80
Sweets	10:00	1,608.80	70.00	394.00	.....	788.40	2,871.20	1,331.98
Timber	176,523.20	3,561.00	2,934.40	876.00	45,881.40	.....	229,776.00	469.00
Varnish of any kind	8.00	3,608.00	739.20	38.20	4.80	427.20	4,825.40	438.74
Water, mineral and gaseous	841.80	265.40	2,321.40	485.20	.....	235.20	4,149.00	133.40
Wine, common, in casks and bottles	33.60	55.40	1,563.40	149.00	.....	83.60	1,885.00	1,361.80
Wool	5,883.80	23,313.20	2,809.20	19,558.20	362.80	.....	51,927.20	10,659.20
Woolen tissue	54,162.80	165,177.20	140,205 20	173,998.00	985.40	4,148.80	538,677.40	103,:09.40
Miscellaneous	.....	.....	.....	.....	.....	484,274.94	484,274.94	.....
Total	512,404.24	1,878,960.59	548,585.25	653,613.02	247,843.84	1,182,033.48	5,023,440.42	1,021,139.92
Total in 1890	402,435.20	1,722,824.00	579,048.60	494,999.80	154,214.40	666,082.20	4,019,604.20	1,008,652.20
Increase	109,969.04	156,136.59	.....	158,613.22	93,629.44	515,951.28	1,003,836.22	12,487.72
Decrease	.....	.....	30,463.35	.....	.....	.....	.....	.....

In looking over the items coming from the United States that have made material gains in this market during the past year, it will be observed that timber exceeds that of the previous year by $45,881.40; lard, $11,815.40; raw hides and skins, $7,564.04; and iron, $7,000.

Of the above total importations to this port only $247,843.84, less than 5 per cent, came from the United States direct, although it is known that large quantities of American products, such as corn, wheat, cotton, lard, and sewing machines, reach this market through English and other houses, and are therefore not credited to our country. In the case of sewing machines, there appears no credit to the United States, although nearly every one in this market is the familiar Singer make. This is due largely to the fact that American producers and dealers practically make no effort to gain a better hold upon this market. It is true that this office is in constant receipt of requests from merchants and manufacturers from all parts of the United States for names and addresses of dealers in given articles, "in order that price lists, circulars, etc., may be sent." The requests are complied with, and in many instances such circulars and price lists are sent, always in English; and, as not one merchant here in a hundred is able to read a word of English, the circulars go into the waste basket without a moment's thought and never lead to a sale.

As I mentioned in a former report, the superiority of American manufactures is acknowledged, and it is believed, with a little push, sales of American goods would make astonishing strides in supplanting those of other countries; at least we should receive a fair proportion of the trade. At present German and English goods control this market, because sellers send their representatives here to learn the wants of buyers and conditions of trade and cater to those wants and conditions. I beg to suggest, if the expense appears too great to justify any single manufacturer or dealer in sending his representative, that a number of dealers in different articles club together and send a joint representative. If American merchants and manufacturers wish to extend their sales in this market, some such course is imperative, and the fact applies as well to other parts of Italy as to Palermo. Sales by price lists and circulars before the goods have been thoroughly introduced and the people made to understand their merit are impossible.

The question of coal is an important one that has hitherto received little or no attention from American coal operators. The general offices of one of the largest steamship companies of the world, owning and operating more than one hundred steamers of all sizes, are located at this place, besides the company's docks, shops, etc., and other manufactories. The immense tonnage of coal required to supply the demands of this company (the Navigazione Generale Italiana) will be readily appreciated. Italy having no coal, all must come from abroad, and the supply for this company's lines to the Black Sea, the Adriatic, to Egypt, to Australia, to India, to South Africa, to South America, and the local lines in the Mediterranean being purchased from this place, will demonstrate its importance as a coal market. But in this, as in other branches, English operators come here every year, make

their annual contracts, supplying this vast tonnage, and the profits go to English operators.

EXPORTS.

As brimstone, next to green fruits, is the largest article of exportation, I present herewith two tables, one showing the quantity exported during the last five years from Palermo, Catania, Girgenti, and Licata to the various countries, and the other showing the quantity exported to the United States during the same period, with the ports of destination.

Table showing the quantity of brimstone exported from Palermo, Catania, Girgenti, and Licata to the various parts of the world during the last five years.

Countries.	1887.	1888.	1889.	1890.	1891.
	Cantars.	*Cantars.*	*Cantars.*	*Cantars.*	*Cantars.*
Australia	7,800	11,505	.....	18,209	4,114
Austria	87,132	116,246	116,799	112,284	133,523
Belgium	69,135	90,361	100,783	95,548	64,769
Denmark	2,624	6,036	5,756	15,207	827
England and India	390,092	463,244	509,640	335,300	315,515
France and colonies	730,888	677,086	875,428	932,871	728,476
Germany	126,109	161,225	200,219	186,989	134,189
Greece	238,813	75,521	132,057	183,391	164,847
Holland	22,703	36,309	31,511	19,317	25,258
Italy	636,966	619,620	565,794	524,591	551,455
Portugal	215,632	206,067	218,384	239,758	155,212
Russia	174,739	286,557	229,820	200,517	164,409
Spain	76,342	44,629	85,614	52,857	38,824
South America	9,220	1,230	298	135	2,188
Sweden and Norway	15,196	39,046	50,691	56,342	31,770
Turkey	81,091	18,942	28,967	112,572	27,038
United States	1,162,445	1,667,451	1,417,105	1,388,893	1,267,122
Total	4,046,927	4,521,075	4,568,866	4,474,781	3,809,536

Table showing the quantity of brimstone exported from Palermo, Catania, Girgenti, and Licata to the United States during the last five years.

Whither exported..	1887.	1888.	1889.	1890.	1891.
	Cantars.	*Cantars.*	*Cantars.*	*Cantars.*	*Cantars.*
Baltimore	133,969	225,290	199,110	206,307	156,845
Boston	42,900	81,900	64,350	32,500	26,650
Breakwater	6,500	.....	.....	.....	8,190
Charleston	186,212	292,452	161,185	358,331	278,935
Gibraltar	7,797	6,240	.....	.....	.....
Mobile	.....	.....	.....	9,620	.....
New Orleans	2,600	3,250	2,600	10,400	6,500
New York	597,727	789,180	727,205	483,609	637,824
Pensacola	.....	.....	.....	18,070	.....
Philadelphia	146,435	153,309	186,345	150,720	89,128
Port Royal	13,000	7,800	.....	7,800	9,100
Providence	8,200	16,250	7,670	8,450	.....
San Francisco	3,845	.....	.....	.....	.....
Savannah	.....	46,085	42,120	76,960	20,150
Wilmington	13,260	30,625	26,520	17,026	33,800
Woodhole	.....	15,080	.....	.....	.....
Zarate	.....	.....	.....	9,100	.....
Total	1,162,445	1,667,451	1,417,105	1,388,893	1,267,122

Table showing the value of the principal articles exported from Palermo during the year 1891.

Articles.	To—						Total.	Duty collected.
	Austria.	England.	France.	Germany.	United States.	Other countries.		
Acid vinegar					$28.00		$28.00	
Alcoholic perfumery					1,950.80		1,950.80	
Artistical articles for collection, pictures of living authors		$472.80	$600.00	$400.00			1,472.80	$14.73
Books printed in Italian language			1,040.00			$240.00	1,280.00	
Brass and bronze in works		175.20			31.40	208.80	415.40	
Brimstone	$3,040.00	512.00	3,460.00		230.00		7,242.00	942.98
Butter						208.00	208.00	
Cement		260.00	63.80				323.80	
Chemical products not named		4,842.00					4,842.00	
Condiments (cinnamon, etc.)		1,720.00	2,064.00		1,396.00	11,868.00	17,048.00	
Cork, uncut			109.40			1,860.00	1,969.40	
Cotton goods						958.80	958.80	
Dried fruits, shelled and not shelled, and figs	48,361.00	64,125.00	29,899.00	9,201.00	4,455.60	12,109.80	168,151.40	
Essence of orange	930.00	75,962.40	12,021.80		9,827.00		98,741.20	
Fish, salt	20,644.00	438.00			1,370.00	700.00	23,152.00	
Flax, prepared, in bags	360.00		3,240.00		2,258.40	2,220.00	8,078.40	
Fresh fruits not named		76.80	96.00			266.00	438.80	
Fresh vegetables not named		140.40			1,112.60		1,253.00	
Glue			166.40				166.40	
Hides and skins	14,943.20	10,407.60	49,806.80				75,157.60	
Horse beans					380.00	102,385.60	102,765.60	
Lemon juice		22,499.00	10,913.20	2,122.00	630.00	5,048.80	41,213.00	
Lemons and oranges	950.40	239,788.80	2,534.40	2,531.60	1,723,050.00	42,336.60	2,011,191.80	
Macaroni	60.00			321.40	2,557.80		2,939.20	
Manna	15,610.00	30,100.00	60,250.00	770.00	2,490.00	1,190.00	110,410.00	
Marble		62.20	26.00	21.40		615.20	724.80	
Meat, salt or smoked			1,296.00				1,296.00	
Olive oil		12,624.00	118,544.00	1,536.00	111,552.00	32,280.00	276,536.00	
Orange peel	64.00	2,788.00	1,516.00	180.00	540.00	2,048.00	7,136.00	
Paper, white and colored			300.00		3,210.60		3,510.60	

Rags					918.40		918.40	512.72
Raw bones and horns			42,888.60				42,888.60	
Raw woolen hair		39,100.00					39,100.00	
Seeds:								
Not oleaginous					6,416.00		6,416.00	88.13
Oleaginous		7,577.60	3,696.00		38.40		11,312.00	320.00
Shoes of any kind						271.40	271.40	
Stearic, wax, and like matches						1,632.00	1,632.00	
Sumac	17,144.40	572,116.80	376,658.80	83,984.80	186,191.20	76,090.40	1,312,186.40	27,395.03
Sweets		94.50	18.90			98.35	211.75	
Timber			407.00		982.20		1,389.20	
Tobacco					222.30	81.60	303.90	
Vegetables, preserved		200.00	740.00		5,444.00	340.00	6,720.00	
Toys	286.00		371.00				657.00	
Wax (worked), yellow		512.00					512.00	
Wine	1,900.00	3,435.20	48,314.40	11,574.80	47,514.40	1,681.60	114,420.40	
Wine lees		437,918.00	16,302.00		110,656.00	96,538.00	661,414.00	11,192.87
Wool, natural and washed		8,354.80	929.80			169.60	9,454.20	
Total	124,293.00	1,536,303.10	788,273.30	112,643.00	2,225,449.10	393,446.55	5,180,408.05	40,466.46
Total in 1890	146,562.80	1,616,708.20	729,859.00	145,346.00	3,475,646.40	268,922.20	6,383,044.60	43,290.60
Increase			58,414.30			124,524.35		
Decrease	22,269.80	80,405.10		32,703.00	1,250,197.30		1,202,636.55	2,824.14

In the shipment of green fruits there has been a marked decrease, as above mentioned, that will appear fully from the table prepared of the number of boxes of oranges and lemons shipped from this place during the year ended September 30, 1891.

Table showing the number of boxes of oranges and lemons exported from the port of Palermo to the United States during the year ended September 30, 1891.

Months.	To—					
	Baltimore.		Boston.		New Orleans.	
	Oranges.	Lemons.	Oranges.	Lemons.	Oranges.	Lemons.
October				332		
November			18,356	17,354	850	10,489
December	2,149	857	23,544	14,383	12,722	33,641
January	343	1,064	17,444	7,160	13,967	18,650
February	403	359	19,896	20,844	5,461	44,467
March			56,654	30,697	2,068	30,305
April	3,080	1,227	12,884	40,251	499	28,615
May		1,769	9,649	14,595		30,435
June			7,377	28,328		23,762
Total	5,975	5,216	165,804	173,944	35,567	220,364
Preceding year	3,179	1,519	132,661	214,966	25,172	252,083

Months.	To—				Total.	
	New York.		Philadelphia.			
	Oranges.	Lemons.	Oranges.	Lemons.	Oranges.	Lemons.
October	64	33,441			64	33,773
November	8,287	40,542	3,847	6,351	31,340	74,736
December	77,077	68,286	7,879	12,002	123,371	129,169
January	34,240	34,495	11,581	4,938	77,575	66,247
February	33,117	58,423	6,618	8,859	65,495	132,952
March	56,341	69,400	41,162	17,439	156,225	147,841
April	40,770	118,833	10,753	11,051	67,986	199,977
May	26,055	127,273			35,704	174,072
June	2,482	135,975	1,450	23,523	11,309	211,588
July		85,937				85,937
August		18,711				18,711
September		17,096				17,096
Total	278,433	808,412	83,290	84,163	569,069	1,292,099
Preceding year	232,131	899,631	67,576	150,317	460,719	1,518,516

In a former report attention was called to the large number of boxes required in the shipment of fruit and the impetus given to the purchase of American shooks by the law admitting boxes so manufactured to free entry. Heretofore the importation of American shooks and their employment in the manufacture of boxes has been largely confined to the sides, tops, and bottoms, using a tough wood obtained from Trieste for ends and the middle partition; but, as the law has been construed to mean that boxes so manufactured should pay duty on the entire box as of foreign origin, it will be

necessary, in order to hold this trade, for American dealers in this article to supply a wood for such ends and middles that will hold nails driven into it as tightly and firmly as that now obtained from northern Italy and Austria. There have been no importations of shooks from the United States since the above-mentioned ruling; therefore, the attention of American dealers is called to the necessity of supplying a material suitable for such ends and middles in order to hold a trade that amounts annually to $1,500,000.

HORACE C. PUGH,
Consul.

UNITED STATES CONSULATE,
Palermo, June 14, 1892.

AUSTRIAN HOPS.

REPORT BY CONSUL-GENERAL GOLDSCHMIDT, OF VIENNA.

HOP DISTRICTS.

The chief centers of the hop-growing districts in Austria are Saatz, Auscha, and Dauba. These comprise about 11,500 hectares* under cultivation of hops, with an average annual yield of 120,000 to 130,000 metric centners.†

The hops of Saatz are claimed to be the best of the world. They are raised on about 7,500 to 8,000 hectares near Saatz. A good middling crop will yield about 50,000 to 60,000 metric centners, at an average expense of 60 to 70 florins per metric centner. The "Auschaer Rothhopfen" (Auscha red hops) are raised on about 2,000 hectares in the district of Rothlande, comprising the hop-growing countries about Auscha, Leitmeritz, Raudnitz, and Wegstadt. The produce, known under the name of "Auscha red hops," is well liked, and with a good crop the cost of producing 1 metric centner will not exceed 60 to 64 florins. The "Grünlande" of Dauba comprises about 1,485 hectares, producing "Grünhopfen" (green hops), located in the following districts: Dauba, 650 hectares; Wegstadt, 155 hectares; Melnik, 214 hectares; Leipa, about 85 hectares. The average crop is about 18,000 to 20,000 metric centners, and the prime cost for a good crop of green varies from 48 to 52 florins per metric centner.

Besides the above-mentioned hop districts, which are all situated in the Kingdom of Bohemia, some hops of a lower grade are raised in the crown lands of Upper Austria, Moravia, Galicia, Styria, Carinthia, and the Kingdom of Hungary.

HOP ACREAGE AND YIELD.

The acreage devoted to hops in 1891 could not be ascertained; however, it is presumed that, in spite of the endeavors of some parties to limit or even to lessen the acreage devoted to hops, in order to realize high prices for that product, it may be taken for granted that the acreage in 1891, as

---

* 1 hectare = 2.471 acres. † 1 metric centner = 221½ pounds.

compared with 1890 and that of the years preceding, has been on the increase, especially as some of the vineyards destroyed by the phylloxera, etc., have been devoted to the culture of hops. The acreage of 1890 has been stated at 14,692½ hectares.

Table showing the acreage, yield, and consumption of hops in the different crown lands of Austria-Hungary, the number of breweries, and the quantity of beer produced in total and per head of the population during the last five years.

Crown lands.	Hops.			Beer.		
				Number of breweries.	Production.	
	Acreage.	Yield.	Consumption.		Total.	Per head of population.
1891.	*Hectares.*	*Met. cent.*	*Met. cent.*		*Hectoliters.**	*Liters.†*
Lower Austria	.....	.....	10,227	74	2,691,537	90.8
Upper Austria	.....	4,600	3,825	224	1,006,729	124
Salzburg	.....	.....	1,253	58	329,794	196
Bohemia	.....	59,000	24,226	748	6,375,446	112.5
Moravia	.....	1,025	3,972	254	1,241,392	54
Galicia	.....	1,850	3,025	161	876,294	13.8
Styria	.....	2,600	2,618	65	747,944	61
Silesia	.....	90	1,215	41	347,108	61.2
Tyrol and Vorarlberg	.....	40	960	138	298,448	34
Carinthia	.....	140	535	81	152,770	46
Bukowina	.....	100	208	8	67,548	10.¾
Carniola	.....	25	215	9	73,702	12.7
Trieste	.....	.....	193	2	59,440	34
Bosnia and Herzegovina	.....	.....	75	9	22,984	1.4
Coast lands	.....	.....	32	1	21,580	2
Hungary	.....	1,400	2,175	98	766,989	4.2
Total	.....	70,870	54,858	1,871	15,079,705	.....
1890.						
Lower Austria	.....	.....	10,115	74	2,662,108	90.2
Upper Austria	676	4,500	3,750	224	986,938	126
Salzburg	.....	.....	1,120	58	329,442	198
Bohemia	10,270	57,500	23,230	766	6,112,862	110
Moravia	291	1,100	3,850	157	1,185,718	55
Galicia	1,817	2,000	3,033	169	866,469	14.5
Styria	1,626	1,575	2,545	67	696,839	57.5
Silesia	.....	50	1,040	42	346,864	61.2
Tyrol and Vorarlberg	.....	25	925	142	302,940	33
Carinthia	10.5	150	24,319	85	162,138	47
Bukowina	.....	75	213	8	60,740	10.5
Carniola	.....	25	205	9	58,534	12.5
Trieste	.....	.....	170	2	43,800	33
Bosnia and Herzegovina	.....	.....	72	8	18,934	1.2
Coast lands	.....	.....	5	2	1,512	0.3
Hungary	.....	1,000	1,640	100	546,569	3.3
Total	14,690.5	68,000	52,437	1,913	14,382,407	.....
1889.‡						
Lower Austria	.....	.....	9,700	76	2,641,911	113
Upper Austria	.....	3,000	3,450	228	873,382	127
Salzburg	.....	.....	1,075	60	319,973	185
Bohemia	.....	55,000	43,600	772	5,944,869	99
Moravia	.....	1,500	3,775	161	1,170,051	50

*26.417 gallons.

†2.113 pints.

‡The acreage in 1889 was 14,422 hectares, of which 3,546 hectares were fields and 10,876 hectares gardens

Table showing the acreage, yield, and consumption of hops, etc.—Continued.

Crown lands.	Hops.			Beer.		
				Number of breweries.	Production.	
	Acreage.	Yield.	Consumption.		Total.	Per head of population.
1889—Continued.	*Hectares.*	*Met. cent.*	*Met. cent.*		*Hectoliters.**	*Liters.*†
Galicia	.....	8,000	3,100	174	768,342	14
Styria	.....	6,500	2,350	68	591,302	52
Silesia	.....	60	1,100	44	315,479	55·5
Tyrol and Vorarlberg	.....	40	1,125	145	275,009	30
Carinthia	.....	200	850	89	149,210	41
Bukowina	.....	125	275	8	62,534	11
Carniola	.....	40	175	8	49,193	10
Trieste	.....	.....	350	2	47,800	50
Bosnia and Herzegovina	.....	.....	75	8	14,996	1
Coast lands	.....	60	25	2	404	0.1
Hungary	.....	1,500	2,400	107	503,976	2.5
Total	.....	76,025	51,400	1,952	13,728,431	.....
1888.						
Lower Austria	.....	.....	9,310	78	2,537,810	117
Upper Austria	.....	3,600	3,500	233	906,526	116
Salzburg	.....	.....	1,000	59	302,737	170
Bohemia	.....	50,000	21,000	783	5,467,340	98.5
Moravia	.....	2,500	3,600	166	1,066,528	50
Galicia	.....	5,250	3,000	169	728,368	12
Styria	.....	6,750	2,500	67	637,116	55·5
Silesia	.....	50	1,150	44	309,218	53
Tyrol and Vorarlberg	.....	25	1,150	145	267,385	28
Carinthia	.....	300	800	92	142,513	41
Bukowina	.....	100	250	7	60,702	9
Carniola	.....	25	152	8	43,185	9·5
Trieste	.....	.....	175	2	46,300	49·5
Bosnia and Herzegovina	.....	.....	75	7	16,040	1.3
Coast lands	.....	50	38	2	889	0.3
Hungary	.....	2,000	2,500	109	651,319	4·5
Total	.....	70,200	50,000	1,971	13,184,026	.....
1887.						
Lower Austria	.....	.....	9,507	80	2,716,692	121
Upper Austria	.....	4,500	3,500	231	912,912	116
Salzburg	.....	.....	1,000	57	297,401	170
Bohemia	.....	45,000	21,045	790	5,504,622	99
Moravia	.....	1,750	3,650	168	1,106,552	51
Galicia	.....	9,000	2,500	169	668,941	10
Styria	.....	6,000	2,525	68	654,509	56
Silesia	.....	25	1,098	46	292,112	50
Tyrol and Vorarlberg	.....	50	1,025	144	258,482	27
Carinthia	.....	250	800	94	140,590	41
Bukowina	.....	50	225	7	56,018	8
Carniola	.....	100	190	7	54,950	12
Trieste	.....	.....	81	2	50,400	50
Bosnia and Herzegovina	.....	.....	32	7	11,312	1
Coast lands	.....	25	5	3	1,333	0.4
Hungary	.....	1,750	2,700	106	691,284	4·7
Total	.....	63,500	49,838	1,979	13,418,110	.....

*26.417 gallons. †2.113 pints.

Table showing the production and consumption of hops, consumption of malt, number of breweries, and production of beer in Austria-Hungary during the years 1887–'91.

Year.	Hops.		Consumption of malt.	Beer.	
	Yield.	Consumption.		Breweries.	Production.
	Met. cent.	*Met. cent.*	*Met. cent.*		*Hectoliters.*
1887	63,500	49,838	3,285,736	1,979	13,418,110
1888	70,200	50,000	3,050,529	1,971	13,184,026
1889	76,025	51,400	3,549,564	1,952	13,728,431
1890	68,000	52,437	3,438,452	1,913	14,382,407
1891	70,870	54,858	3,050,072	1,871	15,079,705

The area cultivated with hops in Austria, according to the annual report of the minister of agriculture for Austria, was 14,690½ hectares (of which 3,744 hectares were fields and 10,946½ hectares gardens) in 1890 and 14,422 hectares in 1889 (of which 3,546 hectares were fields and 10,876 hectares gardens).

As to the proportion of the 1891 crop in the hands of growers and dealers on January 1, 1892, it being assumed that the balance was in brewers' hands or had been consumed, it will be seen by the following statement that there was no stock on hand:

	Met. cent.
Yield of the hop crop of 1891	70,870
Import in 1891 (according to official statistics)	5,326
Total	76,196
Consumption in 1891	54,858
Export in 1891	32,886
Total	87,744

There was, therefore, an excess of 11,548 metric centners in consumption and export as compared with the crop and import of 1891. It may be presumed that that excess was covered by the stocks of former crops, especially the large stock of compressed hops of 1889, which, according to the statement of the nineteenth international grain and seed market (1891), had been entirely exhausted by August, 1891. It therefore appears that the stock in hands of growers and dealers had been exhausted on January 1, 1892. The proportion usually so held at that date in previous years could not be ascertained.

The countries to which the hops are exported and from whence hops are imported into (or shipped through) Austria-Hungary and the quantity thereof are shown by the following tables:

Table showing the quantity of hops exported from and imported into Austria-Hungary during the years 1888–'92.

Year.	Imports.	Exports.
	Met. cent.	*Met. cent.*
1888	7,034	32,386
1889	5,941	30,192
1890	5,836	25,212
1891	5,326	32,882
1892 (January to June, inclusive)	2,064	5,875

Table showing the movement of the Austrian import and export during the several months of 1889, 1890, 1891, and the first six months of 1892.

Month.	Imports.				Exports.			
	1889.	1890.	1891.	1892.	1889.	1890.	1891.	1892.
	Met. cent.	*Met. cent.*	*Met. cent.*	*Met. cent.*	*Met. cent.*	*Met. cent.*	*Met. cent.*	*Met. cent.*
January	273	437	277	459	2,032	2,090	1,346	1,296
February	167	240	236	503	1,028	1,338	985	1,979
March	64	302	149	127	1,356	741	876	883
April	77	214	158	171	1,026	453	636	694
May	69	128	96	650	670	304	588	769
June	195	118	149	154	1,108	313	391	304
July	53	181	144	.....	618	152	384	.....
August	86	67	271	.....	870	375	548	.....
September	1,965	1,324	447	.....	3,857	2,942	1,708	.....
October	1,887	1,585	1,061	.....	8,447	7,473	10,426	.....
November	1,240	880	870	.....	5,958	5,603	11,485	.....
December	849	356	1,468	.....	3,232	3,428	3,513	.....
Total	5,941	5,836	5,326	1,065	30,192	25,212	32,882	4,882

Both the import and export during the first half year of 1892 show a decrease as compared with the same period of 1891. The import from January to July, 1892, was 1,065 metric centners, against 2,064 metric centners in 1891, a decrease of 999 metric centners. The export for the same period in 1892 was 4,882 metric centners, against 5,875 metric centners in 1891, showing a decrease of 993 metric centners.

From the above table it will be seen that the chief transactions in hops occur during the months of September, October, November, and December.

Table showing the countries whence hops were imported into Austria in 1891.

Country.	Quantity.	Country.	Quantity.
	Met. cent.		*Met. cent.*
Germany	4,233	Servia	6
Italy	5	Unknown	18
Russia	1,063	Total	*5,326
Switzerland	1		

*Of this, 18 metric centners were goods returned.

Table showing the countries to which hops were exported from Austria in 1891.

To—	Quantity.	To—	Quantity.
	Met. cent.		*Met. cent.*
Trieste*	32	Turkey	8
Fiume*	3	Roumania	193
Hamburg and Bremen*	2,309	Servia	256
Germany	23,427	Denmark	1,026
Great Britain	801	Netherlands	1,230
France	972	Belgium	652
Italy	315	Unknown	538
Russia	155	Total	32,886
Switzerland	929		

* Destination not stated.

Table showing the countries from and to which hops were forwarded through Austria in 1891.

From—	To—	Quantity.
		Met. cent.
Germany	Trieste*	84
	Germany	8
	Italy	897
	Russia	21
	Switzerland	15
	Roumania	94
	Servia	7
	Bulgaria	34
	Total for Germany	1,160
Russia	Hamburg and Bremen*	108
	Germany	1,383
	Total for Russia	1,491
Other countries	Germany	3
	Italy	11
	Servia	3
	Bulgaria	3
	Total for other countries	20
	Grand total	2,671

* Destination not stated.

This grand total was forwarded as follows:

To—	Quantity.	To—	Quantity.
	Met. cent.		*Met. cent.*
Trieste*	84	Roumania	94
Hamburg and Bremen*	108	Servia	10
Germany	1,394	Bulgaria	37
Italy	908	Total	2,671
Russia	21		
Switzerland	15		

* Destination not stated.

There are no statistics of former years giving the names of those countries to which hops were exported or from which they were imported.

The range of prices for the 1891 crop has been from 80 to 120 florins per 50 kilograms (half a metric centner), which, if the florin be calculated at the present market value of 40 cents, would make 14½ to 21¾ cents per pound. The price is now slowly but steadily declining from the highest figure (120 florins).

Table showing the average price for 50 kilograms of Saatz hops at the opening, middle, and close of each harvest from 1875 to 1889.

Year.	Opening.	Middle.	Close.*
	Florins.	*Florins.*	*Florins.*
1875	110	60	60
1876	300	380	320
1877	110	100	90
1878	115	130	70
1879	150	140	100
1880	100	90	100
1881	130	120	80
1882	160	280	260
1883	160	150	130
1884	110	125	120
1885	80	70	60
1886	105	100	85
1887	110	145	120
1888	150	130	120
1889	85	60	70 to 80

* The last day of each year is taken as the close of the harvest.

Table showing the average price for 50 kilograms of Auscha red hops at the opening, middle, and close of each harvest from 1879 to 1889.

Year.	Opening.	Middle.	Close.
	Florins.	*Florins.*	*Florins.*
1879	85	65	30
1880	45	35	60
1881	80	50	55
1882	100	280	150
1883	85	110	90
1884	80	60	35
1885	35	30	15
1836	60	40	20
1887	40	20	30
1838	90	50	30
1889	60	35	50

The average price of green hops from 1880 to 1889 has been computed at 35 florins per 50 kilograms.

The addresses of three of the most prominent hop-growers, who are recognized as capable judges of the local hop crops, are: Saatzer Hopfenbauverein, at Saatz, Bohemia; Rakovitzer Hopfenbauverein, at Rakovitz, Bohemia; Prince Salm, at New Cilly, Styria. The addresses of three large dealers are: M. H. Russ & Co., at Prague; M. Gütermann Söhne, at Saatz, Bohemia; Benjamin Schwarz & Söhne, at Auscha, Bohemia.

The chief association of hop-growers and dealers is the Hopfen-Signir-Halle (Hall for Marking Hops), at Saatz. The body of managing directors is composed of the "Bürgermeister" (mayor) of Saatz, who is presiding officer; five members of the common council of Saatz; five members of the Hopfenbauverein (Association of Hop-Growers), at Saatz; five members of the Association for Trade in Hops and Products, of Saatz; five members of the communities of the hop-growing district who joined the Hopfenhallenverband; and five members of the communities of the hop-growing county who joined the Hopfenhallenverband.

The names and addresses of some of the newspapers that publish local or general reports about the hop crop or market, are: Brauer- und Hopfenzeitung Gambrinus, at Vienna, 5–1 Wienstrasse, No. 12; Allgemeine Leitschrift für Brauerei und Mälzerei, at Vienna, IX Berggasse, No. 8; Der Böhmische Bierbrauer, at Prague; Saazer Hopfen- und Brauerzeitung, at Saatz, Bohemia.

THE WORLD'S BEER PRODUCTION.

There can be no doubt about the hop industry; that it is growing into greater and greater significance must be admitted when it is shown that the world's consumption of beer is constantly increasing. As is shown by the accompanying table, the production of beer in Austria has increased from 13,000,000 hectoliters in 1885 to 15,000,000 hectoliters in 1891, although the number of breweries has decreased from 1,979 to 1,871. The production of beer throughout the world has increased from 171,000,000 hectoliters in 1888 to 196,000,000 hectoliters in 1891. The fact, too, will have to be considered that, in consequence of the devastation caused by the phylloxera, etc., the cultivating of the vine has become precarious, the quantity of the wine produced has lessened, and wine has become dearer; hence in the wine-consuming countries wine as a beverage has to some extent already been supplanted by beer. In Austria some of the vineyards destroyed by the phylloxera have been transformed into hop gardens. From the whole it may be inferred that in most of the beer-producing countries which are mentioned, and which do not grow hops sufficient to supply their home demands, there is likely to arise an export demand for American hops if both the quality of American hops and the manner of exporting them be such as to answer foreign demands.*

* NOTE BY THE DEPARTMENT.—The consul-general must mean an increased demand, for the exports of American hops in 1891 amounted to 8,736,080 pounds, valued at $2,327,474.

Table showing the number of breweries, the quantity of beer produced, the consumption of malt, and the consumption and production of hops in the various beer-producing countries of the world from 1887 to 1891.

Country and year.	Breweries.	Beer produced.	Malt consumed.	Hops.	
				Consumed.	Produced.
America:	*Number.*	*Hectoliters.*	*Met. cent.*	*Met. cent.*	*Met. cent.*
1887	2,170	39,455,157	15,782,062	135,000	115,000
1888	2,200	34,815,762	13,370,250	140,000	185,000
1889	2,144	36,918,644	13,861,500	150,000	215,000
1890	2,262	41,059,950	12,317,985	130,000	140,000
1891	2,325	44,354,511	15,671,125	140,430	156,000
United Kingdom:					
1887	12,938	46,042,323	18,416,829	350,000	212,500
1888	12,874	45,877,723	18,689,400	300,000	115,000
1889	11,997	46,852,991	18,939,700	290,000	260,000
1890	12,000	56,744,448	22,697,779	300,000	135,000
1891	11,233	52,707,460	18,476,865	293,642	225,000
Germany:					
1887	26,143	44,988,195	17,532,038	332,525	246,100
1888	26,240	47,336,455	18,160,744	184,000	262,900
1889	25,434	47,602,939	18,208,410	197,500	321,950
1890	25,415	52,314,348	15,694,243	177,000	119,500
1891	25,241	52,722,636	15,047,601	182,840	220,500
Austria-Hungary:					
1887	1,979	13,418,110	3,285,736	49,838	68,500
1888	1,971	13,184,026	3,050,529	50,000	120,200
1889	1,952	13,728,431	3,549,564	51,400	76,025
1890	1,913	14,382,407	3,438,452	52,437	68,000
1891	1,871	15,079,705	3,050,072	54,808	70,870
Belgium:					
1887	1,260	9,200,000	3,280,000	39,000	48,000
1888	1,270	10,195,603	3,340,000	45,000	52,000
1889	2,788	9,600,000	3,231,000	38,500	55,000
1890	2,786	9,889,856	1,966,956	38,500	11,000
1891	2,832	9,845,537	2,964,473	38,250	23,000
France:					
1887	2,883	9,186,000	3,860,000	40,000	35,500
1888	2,844	7,941,811	2,670,880	40,000	34,950
1889	2,854	8,111,245	2,721,500	35,000	34,000
1890	2,774	9,365,640	1,309,692	35,000	9,500
1891	2,761	9,476,183	2,884,760	34,800	14,000
Russia:					
1887	1,407	3,578,000	1,531,200	14,500	23,000
1888	1,365	3,555,315	1,524,600	14,000	12,000
1889	1,360	2,928,573	1,002,500	12,500	17,000
1890	1,296	3,954,392	1,086,317	12,500	12,000
1891	1,233	4,456,860	1,158,780	13,375	13,000
Denmark:					
1887	400	1,680,000	840,000	8,000	1,200
1888	394	1,874,212	921,000	8,000	1,200
1889	371	2,186,000	993,400	7,000	1,500
1890	382	2,251,580	675,474	7,000	1,000
1891	292	2,185,600	546,400	7,300	1,750
Luxemburg:					
1889	14	93,256	22,407	375	.....
1890	15	97,819	29,447	.....	.....
1891	15	94,250	22,680	300	.....

Table showing the number of breweries, the quantity of beer produced, etc.—Continued.

Country and year.	Breweries.	Beer produced.	Malt consumed.	Hops.	
				Consumed.	Produced.
Netherlands:	*Number.*	*Hectoliters.*	*Met. cent.*	*Met. cent.*	*Met. cent.*
1887	460	1,630,000	652,000	7,500	2,500
1888	452	1,580,000	630,000	7,500	2,000
1889	461	1,071,429	590,000	7,500	2,500
1890	551	1,602,356	560,824	7,500	1,500
1891	528	1,558,280	389,570	6,175	3,000
Spain:					
1887	70	1,328,000	531,200	7,700	.....
1888	81	1,590,400	548,000	7,700	.....
1889	68	1,025,000	500,000	6,950	.....
1890	70	110,450	66,270	.....	.....
1891	67	184,600	44,304	550	.....
Switzerland:					
1887	420	1,004,000	401,600	4,000	300
1888	417	1,119,984	452,000	4,000	300
1889	415	1,186,423	473,000	2,500	350
1890	425	1,209,654	473,200	2,500	250
1891	413	1,391,000	320,060	3,100	500
Sweden:					
1887	132	914,000	457,000	4,550	500
1888	142	1,008,320	490,000	*4,500	*250
1889	140	1,024,600	495,000	3,500	*300
1890	360	1,146,725	498,000	3,500	*250
1891	382	1,068,270	276,067	3,400	*600
Norway:					
1887	382	720,000	288,000	3,850	.....
1888	381	694,800	271,000	.....	.....
1889	46	712,415	291,000	1,750	.....
1890	47	726,663	294,000	2,000	.....
1891	43	516,390	130,800	1,500	.....
Italy:					
1887	140	145,304	58,121	500	.....
1888	127	174,921	64,600	500	.....
1889	125	137,745	55,400	750	.....
1890	132	185,400	65,400	1,000	.....
1891	139	156,224	36,200	600	.....
Roumania:					
1887	5	80,000	28,000	850	.....
1888	11	84,000	29,100	850	.....
1889	17	100,030	35,000	1,000	.....
1890	17	108,000	32,400	1,020	.....
1891	24	202,334	44,513	700	.....
Servia:					
1887	4	62,000	27,500	620	.....
1888	12	50,000	21,400	620	.....
1889	15	98,000	33,600	868	.....
1890	14	87,000	26,100	750	.....
1891	11	82,500	18,300	300	.....
Bulgaria:					
1890	13	28,000	8,400	250	.....
1891	15	33,200	7,350	100	.....
Greece:					
1887	8	55,000	27,500	580	.....
1888	8	59,605	29,000	580	.....
1889	6	64,284	20,000	450	.....
1890	7	71,225	21,367	500	.....
1891	6	63,600	14,800	800	.....

*Together with Norway.

Table showing the number of breweries, the quantity of beer produced, etc.—Continued.

Country and year.	Breweries.	Beer produced.	Malt consumed.	Hops.	
				Consumed.	Produced.
British India:	*Number.*	*Hectoliters.*	*Met. cent.*	*Met. cent.*	*Met. cent.*
1888	19	220,712	55,153	700	.....
1889	19	231,965	69,589	2,000	.....
1890	22	238,860	60,300	1,000	.....
Recapitulation:					
1887	50,801	173,486,089	66,992,986	999,013	803,500
1888	50,908	171,363,649	64,317,656	807,950	784,600
1889	50,226	173,662,717	65,078,134	806,243	983,625
1890	50,498	195,678,328	61,331,895	773,457	548,000
1891	49,453	196,418,000	61,164,420	783,321	728,220

The data for the above table were collected chiefly from the Brauer- und Hopfenzeitung.

It will be seen that, while the number of breweries has decreased from 50,908 in 1888 to 49,453 in 1891, the production of beer has increased from 171,363,649 hectoliters (4,475,913,516 gallons) in 1888 to 196,418,000 hectoliters (5,189,774,306 gallons) in 1891; that the consumption of malt shows a decrease, which is ascribed to the improved manner of applying the virtue of malt; and that the stock of hops in all the countries taken together amounted to about 320,000 metric centners at the close of December, 1891.

The leading beer-producing countries in 1891 were England and Germany, each with a production of 52,700,000 hectoliters, followed by the United States with 44,000,000; Austria, 15,000,000; Belgium and France, each 9,000,000; Russia, 4,000,000; Denmark, 2,000,000; Netherlands, 1,500,000; and Switzerland, 1,000,000 hectoliters. The other countries produced less than 1,000,000 hectoliters. The chief importing countries of Austrian hops are Germany, France, Switzerland, Denmark, Netherlands, Great Britain, Belgium, etc.

It may be perfectly safe to assume that the hop-importing countries will avail themselves of any source that is able to supply their hop demand in a manner to answer their expectations.

JULIUS GOLDSCHMIDT,
Consul-General.

UNITED STATES CONSULATE-GENERAL,
Vienna, August 28, 1892.

STAVES IN GUADELOUPE.

REPORT BY CONSUL BARTLETT.

There are no staves in their rough state imported into the island of Guadeloupe.

There are imported, annually, from Portland and Baltimore, from 20,000 to 25,000 new very light oak sugar shooks, weighing, with hard-wood heads,

from 56 to 60 kilograms, which are used for making hogsheads to ship white usine sugar to France. The reason why they are required to be so light is that the tare allowed by the custom-house in France on a hogshead with hard-wood heads is 12 per cent; therefore, the lighter the hogsheads the less duties the shippers have to pay. These shooks make what is termed a 36-inch-head hogshead, containing about 750 kilograms of dry white usine sugar. The greater part of this usine sugar is shipped in bags.

The muscovado sugar, which is not manufactured now to the extent it formerly was, is shipped in hogsheads containing each about 600 kilograms, and made from staves of old hogsheads, with a small mixture of new staves hewn out of colonial wood.

There are imported annually from Portland or Baltimore from 10,000 to 12,000 rum shooks, all prepared and ready to be set up on arrival. They are made of good, thick white-oak staves and white-oak heads. The casks made from these shooks contain from 250 to 300 liters of rum. This rum is all shipped to France.

They have of late commenced to import from the United States a small quantity of barrel shooks, with heads. When put up they contain 150 kilograms of usine sugar.

CHARLES BARTLETT,
Consul.

UNITED STATES CONSULATE,
Guadeloupe, April 23, 1892.

FOOD PRICES IN HESSE.

REPORT BY COMMERCIAL AGENT SMITH, OF MAYENCE.

I transmit herewith the prices of the leading articles of food in the grand duchy of Hesse during the year 1891, compared with 1890, which statistics have just been published by the Hessian Government:

Table showing the prices per 100 kilograms of the leading articles of food.

Articles.	1891.	1890.
Wheat	$5.53	$4.90
Rye	5.09	4.25
Barley	4.29	4.35
Oats	3.85	3.99
Potatoes	1.66	1.03
Peas	6.66	6.11
Beans	6.72	6.55
Hay	1.43	1.38
Straw	1.22	1.22

The higher prices for wheat, rye, and potatoes were due to the poor character of the crops of 1891 in Europe, about which so much has been published and read that it is not necessary to treat of the matter here at length.

The following articles, quoted by the kilogram (2⅕ pounds), brought the accompanying prices per kilogram:

Articles.	1891.	1890.
Beef:	*Cents.*	*Cents.*
With bone*	33⅓	32⅔
Without bone	41⅔	40⅓
Cow flesh:		
With bone	30	29
Without bone	35 9/10	35⅓
Veal:		
With bone	29 7/10	29⅓
Without bone	37⅓	36 8/10
Mutton:†		
With bone	30	29⅓
Without bone	37 1/10	36⅔
Sheep's flesh:‡		
With bone	25 9/10	26⅔
Without bone	30⅓	29
Pork:		
With bone	30⅔	32⅔
Without bone	36⅔	37⅔
Flour:		
Wheat	9	9⅓
Rye	7⅓	6 9/10
Bread:		
Mixed wheat and rye	7 1/10	6⅔
Rye	6⅔	5 7/10
Butter	49	48⅓
Roasted coffee	77⅓	76⅓

*It is the custom here to throw in a little part of the waste bone of the animal, unless the purchase is to the contrary.

†This is the flesh of the male sheep.

‡Flesh of female.

I pay for certain articles of food the following prices: Roast beef (rib piece), with extra bone thrown in, 42½ cents per kilogram (19½ cents per American pound); beefsteak (round steak), with no extra bone, 57 1/10 cents per kilogram (25⅕ cents per pound); beefsteak from first cut, what is known here and in France as filet, corresponding to our porterhouse steak, but without the bone and gristle portion, 95 cents per kilogram (43⅕ cents per pound); ordinary beef for soup purposes, with extra bone, 31⅔ cents per kilogram (14 3/10 cents per pound); bones for soup (which I believe are given away in the United States), 16 3/10 cents per kilogram (7⅔ cents per pound); mutton chops, which are sold by the chop, large or small at the same price, and not by weight, 9½ cents apiece; veal cutlets, sold in the same way at the same price; pork chops, sold by the chop, from 7 to 9½ cents each, according to size; beef suet, 23½ cents per kilogram (10 9/11 cents per pound); veal for roasting (rib piece), 33⅓ cents per kilogram with extra bone (15⅙ cents per pound); ordinary veal, with extra bone, same price; leg of mutton, with extra bone added, 38 cents per kilogram (17⅓ cents per pound); mutton from other parts of the sheep, 33⅓ cents per kilogram (15⅙ cents per pound); calf's liver, 38 cents per kilogram (17⅓ cents per pound);

pickled pork, 38 cents per kilogram (17⅓ cents per pound); ordinary sausage for frying, 38 cents per kilogram (17⅓ cents per pound); hog's fat to make lard, 38 cents per kilogram (17⅓ cents per pound), as lard has to be made at home; wheat flour, 10⅘ cents per kilogram (4 8/10 cents per pound); wheat bread, baked in English style, 8½ cents per double loaf weighing 1 1/10 pounds; best butter 66⅔ cents per kilogram all the year round (30⅓ cents per pound); medium butter, 59⅓ cents per kilogram (27 cents per pound); rice, 13⅓ cents per kilogram (6 cents per pound); potatoes, rather variable in price; fine coffee, Mocha and Java mixed, $1.14 per kilogram (51 9/11 cents per pound). The coffee in general use here costs 89⅔ cents per kilogram (40 7/11 cents per pound). The commonest kind of coffee, hardly drinkable by anybody, brings 57 cents per kilogram (26 cents per pound). For coffee for servants 71⅔ cents per kilogram (32½ cents per pound) is paid.

In regard to meats, it should be said that the butchers here have the objectionable practice of usually throwing in extra bone with the meat bought, unless an extra price is paid for meat without this additional bone. They are accustomed to putting in any kind of bone, and one may get the bones of swine along with roast beef. In consequence of this bone species of legerdemain and a very different manner of cutting up animals, it is impossible to give retail meat prices capable of accurate comparisons with those prevailing in American markets.

The whole system of meat-selling here is different from that in vogue in the United States. The butcher here does not stand in any market with his meat exposed in competition with that of others, but has a shop, though to this shop one never goes. No gentleman or lady ever thinks of going regularly to the meat stores. On the evening of each day the butcher sends a man around to his various customers to take their orders for the morrow. Then he kills his animal or animals, according to the demand, and parcels the carcass out among his customers. They have to take anything, as it were, that comes to them; and if they order a roast of beef or a beefsteak they are never sure what part of the animal it is coming from. They are regular customers, and are bound down to some one man, with whom they settle monthly. You may get out of patience with him and go to another of the same fraternity, but will probably fare no better and may do worse.

JAMES H. SMITH,
Commercial Agent.

UNITED STATES COMMERCIAL AGENCY,
Mayence, June 1, 1892.

IMPROVEMENT AND ADULTERATION OF GERMAN WINE.

REPORT BY COMMERCIAL AGENT SMITH, OF MAYENCE.

I transmit herewith a translation of a law recently enacted by the German Parliament respecting the rational treatment and adulteration of wine, which measure has been passed at the earnest solicitation of the wine trade of Germany, which for several years past has been energetically urging upon the legislators of the Empire the necessity of a statute permitting the harmless manipulation of wine and accurately defining what should constitute illegal adulteration. A measure passed in May, 1879, to prohibit and regulate the manufacture and sale of foods and drinks adulterated or injurious to health had, by the general character of its language, application to wine, and made all artificial modification of the juice of the grape, whether harmful or not in its effect upon the health of the consumer, a penal offense, for which fine or imprisonment, or both, could, provided it was sold as wine and not as a manufactured article, be imposed, the tenth section of the act, bearing upon wine, reading:

With imprisonment up to six months and fine up to 1,500 marks [$357], or either, will be subject—

(1) Whoever, with intent to deceive in trade and business, imitates or adulterates articles of food or drink.

(2) Whoever knowingly, with concealment of the fact, sells or offers for sale, under a designation leading to deception, foods or drinks which are spoiled, counterfeit, or adulterated.

This was much too sweeping a piece of legislation in its effect upon wine for wine-growers and the wine trade, and, like all legislative enactments of too comprehensive a nature, was, and to a large extent had to be, ignored and violated by wine-producers and wine dealers. The mere addition of water and sugar necessary at times, especially in years of bad vintages, to make the wine drinkable was a contravention of the law, unless the resulting product was labeled "made wine," which term, as can well be imagined, is always a galling designation to dealers in wines.

The legislation was harassing to the wine trade in a high degree and a constant source of vexation to it, as it could not undertake to label its wines "manufactured," nor yet openly manipulate them. It was no secret that nearly everybody, if not everybody, particularly the peasants, greatly augmented the quantity of common wines grown by adding sugared water and alcohol to them or improved the sour must of inferior vintages in like manner. Both the reputable and disreputable engaged in these practices, but to the former it was always a source of annoyance that a necessary and harmless treatment of wine should be a legal offense for which they might at any time be called upon to answer. The Reichstag has, therefore, year after year, been called upon by a determined party to do something in the matter and remove the rational improvement of wine from the curse of the law;

but nothing decisive was done on its part until recently, when it passed the bill whose provisions are hereto subjoined.

The addition to wine before fermentation of sugar and water to reduce immoderate acidity present should not have to be labeled "made wine," it was argued, as it was not a product of manufacture, but simply the improved must of a bad vintage, which otherwise, without such treatment, would be either undrinkable or objectionable; for, while a wine from a must with 12 per cent of sugar and 14 per thousand of acidity is hardly drinkable, by clever treatment of the same must, without the use of deleterious substances, quite an agreeable wine is obtained. Such a manipulation is a necessity, not only to wine-growers, but to wine-consumers, to make palatable the wines of poor years which contain an excessive amount of acidity and are akin to vinegar in taste. The wines of Germany are naturally sour, on account of the northerly situation of the country, and show for the most part an extraordinarily high percentage of acidity at all times, which, of course, lowers their market value in the degree to which it is present in excess. It is seldom that the grape in this part of the Empire ripens to perfection.* Unless, therefore, the wines can have their market worth enhanced by rational improvement, the grower, in the case of inferior grades of wine, would either not at all or with difficulty cover the cost of production. A succession of bad vintages made it imperative, therefore, upon the Government to lessen the outcry against the severity of the application in regard to wine of the law respecting the adulteration of foods and drinks, and to permit by statutory enactment the harmless melioration of unsatisfactory must within proper limits.

JAMES H. SMITH,
Commercial Agent.

UNITED STATES COMMERCIAL AGENCY,
Mayence, May 30, 1892.

LAW RELATING TO IMPROVEMENT AND ADULTERATION OF WINE.

[Inclosure 1 in Commercial Agent Smith's report.—Translation.]

SECTION 1. The following-named substances, viz, soluble aluminous salts (alum and the like), compounds of barytum, boracic acid, glycerin, kermes, compounds of magnesium, salicylic acid, impure (containing unrefined fusel oil) spirit, impure (not technically pure) starch sugar, compounds of strontia, aniline coloring matter, or mixtures containing any one of these coloring matters are forbidden to be added to wine, vinous, or vinous-like liquors, intended for the use of others as nourishments or luxuries.

SEC. 2. Wine, vinous, or vinous-like beverages, to which, contrary to the provisions of section 1, any one of the therein mentioned substances has been added, are not to be sold nor offered for sale. The like applies also to red wine when its percentage of sulphuric acid per liter of liquid measure amounts to more than is met with in 2 grams of neutral sulphate of potassium. This, however, has no application to such red wines of foreign origin as are sold as dessert wines (that is, southern sweet wines).

* It is officially reckoned that on the average in every twelve years one vintage is splendid, four good, three medium, and four bad.

SEC. 3. As adulteration or imitation of wine within the meaning of section 10 of the act of May 14, 1879, respecting the vending of articles of nourishment, use, and luxury, is not to be considered:

(1) The recognized cellar treatment of wine, including preservative means, even when alcohol or slight quantities of mechanically working clarifying matters (albumen, gelatin, isinglass, and the like), kitchen salt, tannin, carbonic acid, sulphurous acid, or sulphuric acid arising thereupon, are added; nevertheless the quantity of alcohol added to wines vended as German is not to exceed 1 part in 100 parts of wine.

(2) The mixing (blending) of wine with wine.

(3) The disoxydation by means of pure precipitated carbonate of lime.

(4) The addition of technically pure cane, beet, or fruit sugar, technically pure starch sugar, also in liquid solution; nevertheless, the amount of extract and mineral matter in the wine is not to be reduced by the addition of sugar water below the limits observed as a rule in unsugared wine of the wine-growing region, which this [the manipulated] wine in name is meant to correspond to.

SEC. 4. To be held as adulteration of wine within the meaning of section 10 of the act of May 14, 1879, is especially the creation of wine by (1) pouring sugar water on grapes wholly or partly pressed; (2) pouring sugar water upon wine lees; (3) using raisins, currants, saccharine, or other matter than in section 3, No. 4, designated sweetening substances, except as provided in clause 3 of that section; (4) employing acid or acidiferous substances or boquet creatives; (5) using rubber or other solids whereby the amount of extracts is increased, except as provided in section 3, Nos. 1 and 4. Beverages produced by means of any one of the above-mentioned processes, or mixtures of the same with wine, can be sold or offered for sale only under a designation making manifest their character, or otherwise distinguishing them from wine (as "wine from the husks of grapes," from "grounds," "raisin wine," "artificial wine," or the like). The bare addition of raisins to must or wine does not, however, pass for adulteration in the case of such wines as are sold as dessert wines (sweet or southern wines) of foreign origin.

SEC. 5. The provisions of sections 3 and 4 have no application to sparkling wines.

SEC. 6. The employment of saccharine and similar sweetening substances in making sparkling wine or wine from fruits, including wine from berries, is to be held as adulteration within the meaning of section 10 of the law of May 14, 1879.

SEC. 7. With imprisonment up to six months and fine up to 1,500 marks [$357], or either, will be subject (1) whoever willfully offends against the provisions of sections 1 or 2; (2) whoever knowingly sells or offers for sale wine containing an addition of the kind mentioned in section 3, No. 4, under designations which would lead to the belief that such an addition had not been made.

SEC. 8. If the act mentioned in section 7, No. 1, be committed through carelessness, a fine up to 150 marks [$35.70] or imprisonment is to be imposed.

SEC. 9. In cases under section 7, No. 1, and section 8 confiscation of the beverages manipulated contrary to their provisions and sold or offered for sale can be made, regardless of whether they belong to the condemned person or not. If the prosecution or condemnation of a particular person be not practicable, the confiscation can equally well take place.

SEC. 10. The provisions of the act of May 14, 1879, remain in force so far as sections 3 to 6 of the present act do not contain provisions inconsistent therewith. The provisions in sections 16 and 17* of the act of May 14, 1879, apply also to persons acting in contravention of the present act.

SEC. 11. The Bundesrath is empowered to fix the extent to which (1) the substances mentioned in section 3, No. 1, shall be permitted to enter wine in its cellar treatment, as well as (2) the diminution of the amount of extracts, mineral substances, etc., as provided by section 3, No. 4.

* These sections are in reference to costs of suits.

SEC. 12. The Bundesrath is empowered to fix the rules by which the inspection of vinous and vinous-like liquors shall be made, according to the provisions of this act, as well as that of May 14, 1879, in its relation to wine.

SEC. 13. The provisions of section 2 are not to go into effect until October 1, 1892.

The Castle at Berlin, April 20, 1892.

PROCLAMATION RESPECTING THE EXECUTION OF THE ACT REGARDING TRADE IN WINE AND VINOUS AND VINOUS-LIKE LIQUORS OF APRIL 20, 1892.

[Inclosure 2 in Commercial Agent Smith's report.—Translation.]

By virtue of section 11 of the act respecting trade in wine, vinous and vinous-like liquors of April 20, 1892, the Bundesrath has determined to fix the limits of diminution of the rate of extracts and mineral constituents (section 3, No. 4, of the act) as follows: In the case of wine which from its denomination is from a domestic wine district is through the addition of a watery solution of sugar.

(1) The total quantity of extract substances not to be lowered below 1.5 grams; the amount of extract after draining off the acids not volatile not to be below 1.1 grams; the extracts remaining after removal of the free acids not to be below 1 gram.

(2) The standard of mineral constituents not to be below 0.14 gram in 100 cubic centimeters of wine.

BERLIN, *April 29, 1892.*

RAILWAY RATES IN GREAT BRITAIN.

REPORT BY CONSUL SHERMAN, OF LIVERPOOL.

The railway passenger rates may be taken generally as 2, 3, and 4 cents per mile for the first, second, and third classes, respectively. Competition, however, occasionally reduces the first and second class rates.

Railway rates for freight are so numerous and complex, by reason of differential rates, the almost illimitable amount of detail, the variable circumstances which attend the rating of the numerous classes of goods, and the difference between the charges which the railway companies are by Parliament empowered to demand in respect of one line and those which they may exact for conveyance over another, that it would be quite impossible to show them in brief. In fact, nothing less than a complete schedule of the rates on each line, for each class of trains, for each distance and each class of goods, etc., would answer this question. Further, railway rates and charges, as a result of the passing of the railway and canal traffic act in 1888, are at present undergoing revision throughout the country and will come into force at the beginning of next year.

THOS. H. SHERMAN,
Consul.

UNITED STATES CONSULATE,
Liverpool, July 18, 1892.

AMERICANS IN JERUSALEM.

REPORT BY CONSUL MERRILL.

Regarding American citizens in this country, I have done my best to give replies. In the case of the first and second questions, in regard to the number of Americans residing during the past year in the Jerusalem consular district and the average number of Americans resident per year during the past ten years, it was easy, because I have my own consular records to refer to.

The number of Americans residing during the past year in the Jerusalem consular district was 413, of whom 370 were naturalized.

The average number per year of Americans resident during the past ten years in the Jerusalem consular district was 310, of whom 270 were naturalized.

The third question, regarding the number of transient Americans arriving at and departing from the Jerusalem consular district during the past year, was most difficult, because travelers come in such a variety of ways—with tourist companies, with private dragomans, or simply by themselves. We reckon as the "tourist season" from the 1st of June until the 1st of June the following year, and I have put the number of American travelers arriving in Palestine from June 1, 1891, to June 1, 1892, at 450, and from figures actually in my possession I am certain that the number is not overstated. This is about 40 per cent of all the travelers that have been recorded as arriving in Palestine during the period mentioned. It may be necessary for me to say, to avoid any misapprehension, that we do not reckon as "travelers" or "tourists" people who visit this country as "pilgrims," of which class there are from 5,000 to 10,000 every year. This year, however, owing to nearly four months of quarantine, the number of pilgrims has been small.

As to the number of transient Americans arriving at and departing from the Jerusalem consular district for the past ten years, it is not possible to answer, except I can say that the influx of travelers to this country steadily increases from year to year.

The question in regard to the approximate amount of funds drawn from the banks and bankers in the Jerusalem consular district by Americans under letters of credit, drafts, checks, etc., during the past year is likewise a very difficult one. To get at it, even approximately, requires so much work and the asking of so many favors from the bankers that I will not attempt a reply. Moreover, the Palestine trip is so mixed up with Europe, and especially with Egypt, in so far as a traveler's money is concerned, that no satisfactory statement of the nature required in the question could be given. In place of the answer required, I venture to lay before you an estimate of the amount of money left in Palestine the past year by American tourists or visitors. Some travelers visit Jerusalem and the neighboring places only, while others go through the country to Damascus and leave it at Beirut.

The number of American travelers was 450. Three hundred at ten days each equals 3,000 days; 150 at thirty days each, 4,500 days; total number of days, 7,500. From information from agents of tourist companies, hotel proprietors, or dragomans, added to my own experience and observation (I have resided in this country upwards of eight years altogether), a person can not make the Palestine trip for a less amount than $5 a day, while most travelers spend three—even four—times that amount. At $10 per day for each person we have $75,000. This should be regarded as the minimum estimate, and embraces American travelers alone, who, as I have stated, are only 40 per cent of the entire number for the current year. Some years the number of American visitors to this country forms fully 50 per cent of the whole number. On the other hand, Americans spend money more freely than, say, the German travelers, although I do not think they exceed the English in this respect. Thus it will be seen that through travelers a large amount of money is every year brought into this impoverished land.

SELAH MERRILL,
Consul.

UNITED STATES CONSULATE,
Jerusalem, May 31, 1892.

KEROSENE-OIL TRADE OF NINGPO.

REPORT BY CONSUL FOWLER.

Until within a few years the kerosene-oil business was completely in the hands of the United States dealers. American kerosene was the only oil quoted; then came its competitor from Batoum, the latter at times considerably decreasing the business in American oil. Last year a new rival made its appearance, the kerosene oil from Peru, and now another competitor, though at present a weak one, threatens to invade the China market. I refer to the Langkat oil. I inclose articles from the Shanghai papers referring to this oil.

To quote from the statistical report of the imperial customs for the year 1891:

> To exemplify the extent to which kerosene oil is appreciated as a cheap illuminant, it may be noted that the consumption has risen from 8,256,000 gallons in 1882 to 49,348,000 gallons in 1891.

Of this total Russian oil represents 10,000,000 gallons. The comparative increase in the rival oil is shown in the following table:

Year.	American.	Russian.
	Gallons.	*Gallons.*
1891	39,348,477	10,000,900
1890	23,591,113	7,237,611
1889	14,999,942	5,655,471

These figures include the total imports for all China. Of the total amount of oil imported in 1889, nearly 73 per cent was American and 27 per cent Russian; of the kerosene imported in 1891, 80 per cent was American and 20 per cent Russian. Approximately, China imported from America 24,348-535 gallons more in 1891 than in 1889; on the other hand, Russian oil increased during the same period 4,345,531 gallons. Thus the American oil more than holds its own in the ratio of increased importations.

In the consular district of Ningpo, comprising the whole province of Che-Kiang, containing 39,500 square miles and a population variously stated from 25,000,000 to 35,000,000, during the year just past (1891) there were entered through the Ningpo custom-house 1,879,730 gallons of American kerosene, valued at 266,983 Haikwan taels, and 579,400 gallons of Russian, valued at 78,063 Haikwan taels. The Haikwan (customs) tael is worth $1.20.

Through the custom-house at Wenchow, in this district, there were entered 185,000 gallons of American, valued at 27,100 Haikwan taels, and 185,000 gallons of Russian, valued at 25,195 Haikwan taels. There were sent overland to various towns in this district under transit passes from Shanghai, 1,151,800 gallons of American, 235,000 gallons of Russian, and 8,500 gallons of Peruvian. The total amount of oil imported from Shanghai through customs ports and overland under transit passes was as follows:

Description.	Quantity.	Value.
	Gallons.	*Haikwan taels.*
American	3,216,530	304,219
Russian	999,400	119,723
Peruvian	8,500	7,300
Total	4,224,430	431,242

Estimating the population at 25,000,000 (a very low figure) and each family as containing five persons, and that each of these families consumed 1 gallon of oil last year, it would appear that more than 750,000 families did not use a drop of kerosene; but these estimates are far from showing the true number of families that have not yet commenced the use of kerosene, because it follows that when a family uses 1 gallon it would naturally use more, therefore increasing the consumption and, of course, lessening the number of families using kerosene. It would be safe to state that not more than one-fifth of the population of this district use kerosene of any kind.

Of the whole amount of American oil imported into China in 1891—39,348,477 gallons—this district took 3,216,530 gallons, or nearly 8½ per cent, valued at 304,218.84 Haikwan taels; of the total amount of Russian oil imported in the same year—10,000,902 gallons—this district took 999,400 gallons, or nearly 10 per cent, valued at 119,723 Haikwan taels; and of the total importation of Peruvian oil into China—260,020 gallons—this district consumed 8,500 gallons, valued at 7,300 Haikwan taels, or nearly 4 per cent of the whole.

The above is given with a view of pointing out what a large business is being done in oil and yet how small it is in comparison with the field. The trade is really beginning. The American oil is now supreme, but will it continue so? If our merchants at home do not look after this growing business sharply and contest every point, recent events point towards the time in the near future when the oil trade of the United States in China will be a thing of the past. The oil dealers in the United States, so far as I can see, are making no special efforts to push their sales in this Empire, although a few years ago great efforts were made, and with success; but of late years that energy has disappeared. The oil is shipped and handled year in and year out in the same manner. The only reason that American kerosene holds its own is its great superiority over the Russian; and, the price being the same, or nearly the same, to the consumer, he prefers the American for its brilliancy, which more than offsets whatever increase in price there may be, as it burns longer, gives out less smoke, and is more securely tinned than its rival, the Russian.

The Chinese have discovered that not only does kerosene give a better light than the bean or tea oil, but that it is cheaper.

Its use is not confined to the coast ports, but it is carried into the interior under a pass taken out at the custom-house (it being a foreign import). This pass is called a transit pass, and frees the merchandise mentioned therein from further exactions or likin at the stations that it passes. An enormous trade is carried on in the country. During the year 1891 2,775,810 gallons of American oil, 587,000 gallons of Russian oil, and 19,500 gallons of Peruvian oil left Shanghai overland under transit passes. The subjoined table shows the quantity sent into the cities of this district from Shanghai overland under transit passes.

Table showing the oil brought under transit passes from Shanghai into the province of Che-Kiang.

Place.	American.	Russian.	Peruvian.
	Gallons.	*Gallons.*	*Gallons.*
Shaoshying	2,000	43,000	.....
Hangchow	204,600	86,800	2,000
Huchow	347,600	88,500	4,000
Chuchow	524,100	16,500	.....
Chia Hsing	62,200	1,000	2,500
Chinwha	10,300	.....	.....
Taichow	1,000	.....	.....
Total	1,151,800	235,800	8,500

The inland trade of Ningpo during the year 1891 shows the greatest increase, the quantity sent inland being 884,410 gallons, against 554,650 gallons in 1890. The American oil formed the bulk of the shipments, but Russian increased from 9,790 gallons to 65,760 gallons.

The principal towns in the district to receive this oil from Ningpo in 1891 were:

Towns.	Quantity.	Towns.	Quantity.
	Gallons.		*Gallons.*
Hangchow	25,000	Chu-ü-chou	22,460
Shaoshying	201,380	Kwang Hsin	199,350
Taichow	1,500	Huchow	20,350
Chinwha	143,050	Other towns	46,110
Chuchow	242,210	Total	884,410
Yenchow	5,500		

Of the foregoing, 818,650 gallons were American and 65,760 gallons were Russian, as compared with 544,860 gallons of American and 9,790 gallons of Russian oil in 1890.

The following table shows the quantity of oil sent into the country from Wenchow, in this consular district:

Towns.	American.	Russian.
	Gallons.	*Gallons.*
Chusan	390	80
Lishin	110	.....
Lung Chu-an	26,740	3,550
Ping-yang	4,690	15,180
Sung-yang	1,420	540
Taichow	960	.....
Tai-Ping	1,200	.....
Yo-Ching	120	.....
Yu-huan	100	.....
Total	35,730	19,350

From Wenchow there were also sent into the Fuchau district under transit passes 6,040 gallons of American and 3,660 gallons of Russian oil.

The total amount of oil sent overland from Shanghai was as follows:

Description.	American.	Russian.	Peruvian.
	Gallons.	*Gallons.*	*Gallons.*
Ningpo district	1,151,800	235,000	8,500
Other districts	1,624,010	352,000	11,000
Total	2,775,810	587,000	19,500

Of the total amount of kerosene entered at the custom-house at Ningpo—1,879,730 gallons of American and 579,400 gallons of Russian—818,650 gallons of American and 65,760 gallons of Russian oil were sent into the interior, leaving 1,061,080 gallons of American and 513,640 gallons of Russian for local consumption among an estimated population of 3,000,000 people—about 1 gallon to every two persons for the year.

Of the total amount of oil received at the Wenchow custom-house—185,000 gallons were American and 185,000 gallons were Russian—1,000

gallons of American and 6,000 gallons of Russian were reëxported to other Chinese ports, 35,730 gallons of American and 19,350 gallons of Russian were sent into the country, and 6,040 gallons of American and 3,660 gallons of Russian were sent overland to the Fuchau consular district, leaving for local consumption among an estimated population of 2,000,000 people 142,230 gallons of American and 155,990 gallons of Russian.

The following table shows the consumption of oil in the country and in the treaty ports of Ningpo and Wenchow, exclusive of that reëxported or sent to other districts:

Description.	American.	Russian.	Peruvian.
	Gallons.	*Gallons.*	*Gallons.*
Total received (net)	3,209,490	989,740	8,500
Sent inland	2,006,180	320,110	8,500
For treaty ports (net)	1,203,310	669,630	.....

From this we see that nearly two-thirds, or 62 per cent, of the total of American oil imported was used in the interior, and, on the other hand, only about one-third of the Russian oil went inland. Again, estimating the population of Ningpo and the adjacent towns at 3,000,000 and that of Wenchow and neighborhood at 2,000,000, it will be seen that 5,000,000 people used 1,872,940 gallons of oil, of which more than 62 per cent was American, and that in the interior 20,000,000 people used 2,334,790 gallons of oil, of which more than 89 per cent was American.

Satisfactory as these figures are, they show room for great improvement. The market is vast and will increase. Competition for this rich field is keen, and no efforts are being spared to wrest this trade from the hands of the United States and direct it towards Russia.

Kerosene is called by the Chinese "fire oil," and its use has spread from house to house, hamlet to hamlet. Far into the interior it can be seen exposed for sale in the little shops, where it is baled out in small quantities to suit the customers, a few cash worth at a time. In some old, conservative shops red candles burning in glass shades are still to be seen, but the small dealers and hucksters are gradually increasing their use of the foreign oil. The red candles have been weighed in the balance and found wanting, and, not being hampered by two or three generations of respectable ancestors who preceded them in the same line of business and who managed well enough with candles, and with no "fing-shin" (superstitions) on the subject to be deranged by the change, they are, as new men, more open to innovation, and readily adopt what common sense shows is the better vehicle of light.

The necessity of supplementing its brilliancy by keeping the chimney clean is not so generally known as it ought to be; nevertheless, with the tin lamp filled with kerosene there is less smoke and smell than with the old native wick floating in a bowl of groundnut oil. The artisan can perform

better work at night—work that he could scarcely do before the advent of kerosene.

Commissioners of customs have written upon this subject many times in the past, and their views are worthy of attention. One has said:

It may be safely believed that the quantity of kerosene which China is likely to consume in future years not far distant will be vastly beyond the present importation. The quality of the oil appears bad in some cases, and fires are ascribed to its giving off inflammable gases at a dangerously low temperature.

No doubt it is most important that the quality of this oil be kept up to a fair standard, otherwise the Chinese will place difficulties in the way of its sale. On the other hand, those who have observed how careless the Chinese people are in handling such hazardous articles as gunpowder and kerosene will not be surprised when they hear of disastrous fires. Efforts should be made by packers of this oil in the United States to devise for it tins calculated to facilitate the Chinese shopkeepers' custom of ladling the oil into bottles in selling, and at the same time to secure it as far as possible from risk of fire arising from this and kindred forms of carelessness in handling. If this trade be well managed by the foreigners, it ought very rapidly to assume immense proportions. Kerosene is one-third cheaper than native oil. The first cost of lamps of a new form in a country where such extreme economy prevails may have some influence in retarding the introduction of kerosene, but the Chinese make very cheap lamps for kerosene, and the people will rapidly learn where the path of true economy lies.

Russian oil first arrived in this district in 1888. The complaints against this oil are many. It is highly dangerous, smells and smokes terribly, is very poorly packed; tins corrode, owing to sulphuric acid, and consequently leak; and when once opened the oil quickly deteriorates and loses power and brilliancy. These facts are well known in the country, and, although it is sold a little cheaper, the inland consumer prefers the oil from the land of the "Flowery Flag," which he designates the "old brand" and that from Russia the "new brand." Many attempts—and I am sorry to say they are sometimes successful—are made to pass off the cheap Russian oil for the better American.

While the great strides made in the oil trade have done much to lessen the candle trade, the shipping business has been greatly benefited; for all the oil is brought to the various ports along the coast in native craft, the steamers refusing it as cargo. This carrying business has been a great boon to the coasting trade, and the sure and increasing traffic has had its effect in bettering and increasing the number of boats.

The Chinese use the tins that the oil comes in in various ways, and many shops are to be seen where a business is being done in buying empty cans. They give as much as 5 cents for an oil tin. They are used as buckets, water spouts, for roofing, for making lamps—in fact, they are put to every conceivable use.

The oil trade in China has grown upon its merits. It has been, and is now in many places, retarded by the officials and by guilds whose trade was affected by its sale. Only a few years ago the officials at this port strictly forbade the use of kerosene, but after strong pressure from the consul the order was revoked.

The oil trade of Ningpo is entirely in the hands of the natives. They have a guild that is all powerful. Whatever that guild says is law. If the guild says "sell at such a price," woe betide the one who disobeys that order. Should a foreigner undertake to sell oil, he would soon be forced to terms, *i. e.*, forced to give it up. I can give instances of their power that have come to my own attention. To show how fertile they are in resources, I mention a case that occurred last summer. An American house here bought a large quantity of oil (Devoe's). A place was set apart away from any dwellings, in accordance with local regulations, for storage. The likin officials were satisfied, although really, the oil having paid import duty, they had nothing to do with it until it was about going into the interior, when these officials would exact another duty, or likin. When the oil had all been stored, suddenly they turned round and demanded that it should be stored somewhere else, claiming that it was too far from the likin office. The firm referred to had an empty godown (storehouse) in the settlement back of the likin office and alongside of the native bank. When the oil was nicely stored in this godown (under the direction of the likin office), which was built entirely of stone, separated from all other buildings by an alley-way, had no windows and only one door, the bank insisted that the oil should be taken away, as it was dangerous. At this stage of the case I was appealed to. I at once suspected the oil guild, and upon investigation I learned that the guild, alarmed at the success of the American, instigated the likin office to order the oil put somewhere else, they, of course, having seen that it could be easily shipped upcountry from where it was stored at first on the banks of a river. The place it was removed to was difficult of access, and off the line of native trade. The guild expected that the American would "give in," but he quietly moved to where they wanted him to. That was too much for them; therefore, they got the bank (Chinese) to fight against the American, but I would not listen to a change, and they, seeing they had been caught, let the matter drop. These changes had cost the merchant 4 cents on every case, and his profits were thus reduced to only a cent or so a case; another change and he would have lost on the deal.

I mention this to show under what embarrassment foreigners do business in an "out port" of China. The early arrivals in China did business through the Co-hongs of Canton; but that was stopped by treaty, and the treaties stipulated that foreigners would be allowed to carry on business at any of the ports. The guilds were not reckoned with. To-day no foreigner would dare to antagonize a guild if he hopes to succeed in China. The likin officials and the guilds direct the whole trade of China. If a guild wishes to raise money for charities—for sufferers by floods, for instance—they go to the foreign merchant in the same line of business. If the piece-goods guild wishes to raise money for flood sufferers, they send to the foreign piece-goods importers, and every one of them subscribes a large sum.

To-day the kerosene oil is in the hands of the Chinese about as soon as it lands, and the whole trade is controlled from one center.

The Chinese, while they go to the best market as a rule, are to some extent influenced by appearances. The British influence in China is far and away above all others; their flag is oftener seen than the Chinese; nearly everything is in their hands. Their greatest rival for the China trade is the United States, and they will let no opportunity pass to decrease our business; but, in spite of these efforts, our cotton and oil trade is steadily increasing. English houses have pushed the Russian oil, English houses have introduced the Inca oil (Peruvian), and now it is an English house that is building tanks in Shanghai for the reception of the oil that is to come from Batoum in tank steamers. Already a tank steamer has been launched at Hartlepool expressly for the oil trade of the East.

What will be the effect of the new regulation allowing tank steamers with kerosene to pass through the Suez and land their cargoes in tanks in Shanghai? The North China Daily News of January 27 last had an article that deserves attention from our people. The prognostications contained therein are about to be fulfilled to a certain extent. After July 1 tank steamers will be permitted to pass the Suez.

The remarks about tin will stand correction after reading Mr. Ayers's report upon the production of that article in the United States.

The remarks made by the commissioner of customs at Shanghai in his last annual report seem about to be realized—

> Kerosene, if its use grows with its import, must be employed to an extent at least 50 per cent greater than it was even a year ago, and we have every prospect of an even greater consumption when, as seems probable, tank steamers bring it here at a reduction of 30 per cent on present prices.

JOHN FOWLER,
Consul.

UNITED STATES CONSULATE,
Ningpo, June 14, 1892.

CLIPPINGS FROM SHANGHAI NEWSPAPERS.

[Inclosure in Consul Fowler's report.]

NORTH CHINA DAILY NEWS, JANUARY 27, 1892.

The Liverpool Journal of Commerce of the 9th of December has a long article on the petroleum trade, pointing out that there must soon be additions to the present two solitary centers of supply—Batoum and Philadelphia. All eastern Asia, it says, will before long be supplied from Vancouver, the shipping port for the enormous, but practically unworked, oil fields of northwest Canada. Callao will supply New Zealand and Australia from the Peru fields. Philadelphia will supply its home market and will compete with Batoum for Europe, but Batoum will supply all western Asia and eastern Africa. Philadelphia feels keenly already the competition of Batoum, whose steamers deliver their cargoes at the ports of India and China before the sailers from Philadelphia have got round the Cape of Good Hope. Batoum would beat its rival out of the field but for Russia's high tariff and depreciated currency. For eastern markets the oil must be packed in tins, and these tins have to come from Swansea, whereby Russia is seriously handicapped, for the oil itself only costs 1½*d.* to 2*d.* a gallon free on board at Batoum. What is wanted is that Batoum shall ship its oil in tank

steamers, "and," says the Journal, "we believe we are correct in stating that steps are being taken to erect storage tanks at Bombay, Calcutta, Singapore, Shanghai, etc. We have always consistently urged that the only way in which to transport petroleum, either by rail or by sea, is by means of locomotive tanks, *i. e.*, bulk steamers and tank cars. Then comes the question of retail distribution, and here we see that Philadelphia is not in it. At Singapore we have in the mines of Salangore and Perak supplies of tin which, with our own natural deposits, enable us to supply the world. McKinley never did a better service to the British petroleum trade than to pass his tariff act, which, we trust, may never be repealed. We may thus state the future history of the eastern petroleum trade—British tankers will convey Russian oil to the eastern ports; British factories at Singapore will turn out tin cases, lamps, etc., made by skilled Chinese labor, and put them all over the eastern markets at a price and of a quality which America can not hope to touch. We shall, in conjunction with Russia, simply swamp all Asia with Russian oil transported in British bottoms and retailed and burnt in British manufactures. If our local petroleum merchants would only show a little enterprise and go into the question, they would find the Indian and Chinese markets at their feet." The Journal goes on to assert its belief, which is fortified by the fact that underwriters charge a lower rate of premium on oil in bulk than in cases, that a "tanker" laden in bulk is safer than a steamer laden with oil in cases, "because it is most difficult and nearly impossible to set fire to a tank of oil, but a case or cases need only to have a gallon of oil capsized over them to ignite and blaze furiously." "There is nothing," it concludes, "to close the Suez Canal against tank steamers. We understand that the Government has appointed a committee to investigate the matter; but really there is no need for investigation, and all the committees in the world will not elucidate anything fresh. We hope to see the oil-in-bulk trade through the canal attain very large dimensions, and so far we can see no valid reason why it should not run the trade from Philadelphia out of the eastern market altogether."

TEMPERANCE UNION, MAY 5, 1892.

A comparative test of the brilliancy and utility of oil from the Langkat oil springs in Sumatra, as compared with American and Russian oil, was made at Penang on the 9th instant. The Penang Gazette, giving the results, says: "Three tins were opened at about 9 p. m., containing the three oils of Devoe, Batoum, and Langkat, respectively, and three new lamps, marked for identification, were filled with the respective oils. The result of the first test was decidedly in favor of the Langkat oil as regards illuminating power, Devoe coming second, and Batoum last. It was noticed that while Batoum started best, the light soon fell, while Devoe remained about stationary; but Langkat increased in brilliancy, and had to be turned down twice. After about an hour and a half the lamps were again tested, when Batoum was found to present a poor spectacle comparatively, having to be advanced halfway up the marked distance on the table, in order to compete with Langkat, while Devoe, though not quite so bad, had still to make a considerable advance from zero. It was again observed that the Langkat oil maintained its brilliancy, while Devoe's had fallen and the Batoum fallen terribly. It was apparent that the Langkat oil was composed almost entirely of light oils, while the others had a more or less large percentage of heavy oils, which militates against maintenance of their brilliancy, which is a common experience. When the lamps came to be put out, it was further noticed that, while there was smoke with the Devoe and Batoum oils, there was none at all with the Langkat, and, on the wicks being examined, it was observed that the Langkat lamp wick was burnt scarcely at all and fully three-fourths less than those of the Devoe and Batoum lamps. The unanimous verdict of the company was that the Langkat was the superior oil, both as regards brilliancy, smoke, and effect on the wick. The Langkat oil has two other pleasant features. It is perfectly clear, almost white, and has hardly any smell. With greater brilliancy, permanence of brilliancy, little or no smoke, the slightest possible deposit of carbon on the wick, clear water color, and scarcely any smell, the Langkat oil has, in our opinion, most distinctly a most prosperous feature before it."

TEMPERANCE UNION, APRIL 28, 1892.

In the opinion of a correspondent of the Deli Courant the petroleum found in Langkat in wells, which a company is actively engaged in working there, comes fairly up to the mark. The oil is said, after careful manipulation, to be clear in color. It gives hardly any smell and yields a bright flame. One well alone is estimated to turn out 700 cases of oil a day. The petroleum first drawn from the wells proved rather impure, but subsequent supplies, carefully treated, are reported to be of excellent quality.

Says the New York Maritime Register: "Who shall supply light to the East, Russia or the United States? It is a race between the two countries, with advantages fairly well divided. Both countries are rich in oil fields of great productiveness, with the advantage of proximity to the East in favor of Russia and superiority in quality of oil in favor of the United States. Asia depends on both for light at night, and the question yet remains as to which will furnish the largest supply. The list of petroleum shipments from the United States to ports in Asia during the year 1891, compiled by Messrs. Vernon H. Brown & Co., of New York, shows that there was a material decrease in the shipments of 1891 from those of 1890. This decrease of 3,294,957 cases was divided among all the ports except Shanghai, Hongkong, and Nagasaki, the shipments to which showed a slight increase. Out of 205 vessels engaged in the carriage of this petroleum 34 were steamers—1 Norwegian and 33 British. The British, as usual, took the lion's share of shipments in 115 vessels, or over half of the total. American vessels engaged in the trade numbered only 55. This is not a good showing, especially as our shipping has increased a little during the past year."

NEW YORK MARITIME REGISTER, DECEMBER 12, 1891.

Probably no great trade was ever so completely revolutionized in so short a time as that of oil transportation on the sea. Even the change in oil transportation on land, from railroad and canal to pipe line, is no parallel, for that took many years; but it took only four or five years to wipe an enormous fleet of sailing vessels out of existence, so far as the carrying of petroleum was concerned, and substitute another fleet of large, fast, and powerful steamships.

JAPAN MAIL, OF YOKOHAMA, MAY 21, 1892.

Buyers of kerosene have only taken sufficient to fill immediate requirements, but for the lots bought full prices have been paid. Another cargo of Russian has come in, and for this brand quotations, though unaltered, are slightly weakened. The arrangement having been concluded by which tank steamers will be permitted to pass through the Suez Canal after the 1st of July, there is no doubt that Batoum oil will be placed upon this market shortly at such a price as will almost exclude the product of the United States. Russian oil is in good repute in the interior, and the absence of the charges for tinning and casing must make an immense difference in the laid-down cost of kerosene in the eastern markets.

SILK INDUSTRY OF ZURICH IN 1891.

REPORT BY CONSUL CATLIN.

The annual report of the Kaufmännische Gesellschaft (Mercantile Association) of Zurich for 1891, just published, contains a full and interesting report upon the silk manufacturing interests of this vicinity.

SILK GOODS.

In the matter of silk goods, the report states that the year's business may be classified as "middling," with, however, certain exceptions in favor of those manufacturers who took fixed orders in the spring, instead of taking the

chances of selling from their stocks on hand. Those who took the latter course could only dispose of their goods at a reduction of from 10 to 15 per cent on the prices which subsequently, in the fall season, were readily paid on orders. Of the above percentage of reduction, 5 to 8 per cent is ascribable to the fall in raw silk, the remainder to the general falling off in selling prices, which affected nearly all of the Zurich articles, but especially satins merveilleux, failles françaises, satins, radzimirs, and persans noir. At the close of the spring season there were great quantities of black failles françaises and persans left on hand vainly seeking purchasers.

The only articles which went well were black and colored bengalines, mixed with wool, and façonnés, in large geometrical designs, lovers' knots, etc. In fact, the competition in bengalines may be considered the cause of the French failles, usually so popular, having been pushed into the background, and the report says it is deeply to be regretted that the Zurich fabrics in this line have not met with even greater success. The secret lies in the fact that the wool had then to be bought in France at high prices, and that there were at that time in Switzerland no dyers who could dye the wool when purchased and no establishments to finish the goods properly when made. These disadvantages have now, it is true, been overcome, but they had their effect on the selling power of the article referred to. With façonnés the case was better, inasmuch as for their manufacture and finishing there exist in Switzerland some well-equipped establishments, capable of doing good work, and against which, in point of price, even Lyons can not compete. Owing to this fact, façonnés scored the greatest triumph for the Swiss silk industry in 1891.

Yet much greater success is possible. "If," says the report, "we were to-day in position to manufacture Bengaline façonnés, for instance, with small broché effects, by machinery, we should find everywhere an extremely good market and drive our Lyons competitors everywhere out of the field."

Another Zurich article which found favor in 1891 was half-silk lining, which met with ready and paying sales during the entire year, and especially to American buyers. Black taffetas, too, which for some years past had been weak, came again in rather heavy demand for the manufacture of underskirts, a fact which gave fresh impetus to hand weaving, inasmuch as the article in question is always superior when hand woven to that made on power looms. Surah glaçé and taffetas glaçé were also much sought for. But surah uni, both in black and colors, constituted unquestionably during the entire year the bulk of Zurich's mechanical product in silks.

The report continues:

American buyers who came to Zurich, and they were not few, told wonderful stories of the progress of American manufacture on the one hand and of the orders for façonnés and bengalines they had given in Lyons on the other, but seemed to have had few orders left over for Zurich, with the exception of some damassés, cravat stuffs, and failles françaises. In stuffs dyed in the piece, which they import in quantities from Lyons, we have but two firms that can do anything; on the other hand, they gave heavy orders in mixed silk and cotton linings. Nevertheless, there is reason to fear that in this line of goods as well the Zurich fabric must gradually give way before the American.

Nothing, however, contributed more during 1891 to the meager financial showing in Zurich's silk industry than the disfavor of the prevailing fashions, which decreed that silks should no longer be worn on the street or in daily social intercourse, but at most only in the theaters, at concerts, etc.

The report says:

Whoever is seen in the street wearing a silk dress does not belong to the elect, and is smiled upon with pity. We might find some comfort in this antisilk caprice among the upper ten thousand if at least the servant girls were possessed with a mania for wearing silk dresses, as was the case in the United States thirty years ago; but even this solace is denied us, for the servants follow their mistresses' example, and, like them, dress in woolens and cottons. We can hope for no improvement in our industry until the unfortunate mania prevalent among our ladies of dressing in men's styles, of strutting about in men's shirt bosoms, with men's cuffs and men's standing collars, with a tight-fitting woolen jacket made by a man tailor worn over the shirt bosom, shall have been broken up. Under existing fashions we are condemned to manufacture only linings, underskirts, and trimmings (instead of dress goods), the consumption of which, it is true, is enormous, but which involves a demand for always lighter, heavier-charged, and less substantial goods. With this latter evil the whole world's silk industry is ailing, and to this is to be ascribed the fact that silk prices can not recover, notwithstanding that they are lower to-day than they were at the time of the memorable revolutionary year of 1848.

Unfortunately, nothing at the commencement of the present year justified hope for any immediate improvement in Zurich silk industrial interests in this regard. Surah couleur in *uni* and *glaçé*, partly for use as linings and partly for ladies' cravats, will continue to play the chief role in sales. To these may be added black surahs and merveilleux, taffetas, light persans, and light-colored failles for foundation silk. The articles which from five to ten years ago constituted the bulk of hand-loom production, namely black persans and black colored faille françaises for dress purposes, at from 4 to 5.50 francs per meter, are dying out, and manufacturers who think they can keep on with them can make up their minds to heavy losses.

In view of this fact, the question unavoidably arises, what is to become of the Lyons looms, which for years have been the pride of large manufacturers here and the principal source of their revenues, while at the same time constituting for the more skilled hand weavers their best means of earning a subsistence? Shall they be broken to pieces; shall wages be reduced so as to drive fashion by force, through still lower prices, into other channels; or, finally, shall there be a return to the production of old-fashioned goods—taffetas (*glaçé, rayé, et quadrillé*)? The latter is certainly a pitiable movement backwards, but it at all events leaves the way open, on the one hand, to insure the hand workers a chance of earning a modest pittance, and, on the other hand, to be in position to utilize a possible return to better times later for heavy silk dress goods. Meantime the outlook for the Zurich silk industry is not cheering. The French market, owing to the application of the minimum tariff, will be to a considerable extent lost, especially if, as appearances indicate, the example of some Swiss manufacturers in establishing themselves on French soil finds imitation. Germany, when the exorbitant entry duty of 600 marks on silk goods shall have been extended for twelve

years by the new German-Swiss treaty, will make every possible endeavor to manufacture Swiss articles herself. North America, whose silk industry is developing enormously, will naturally recede in importance as an outlet for Swiss silks; and, as far as Austria, Italy, and Spain are concerned, the commercial treaties between Switzerland and those countries possess for the Zurich silk industry only a platonic value. On the other hand, there are hopes of winning territory away from the French in Belgium and Holland; and, as soon as there is an end to the financial chaos in Brazil, Chile, and the Argentine Republic, large demands may also be looked for from those quarters. These are all, however, uncertain dependencies at best. But England, fortunately, is a first-class customer, and the Swiss silk men can not only count upon her remaining so, but even upon her giving them increased orders, to the detriment of French manufacturers.

RAW SILK.

The total amount of raw silk brought to Zurich during 1891 was 1,179,357 kilograms, and from the following sources, viz:

Countries.	Organzine.	Tram.	Grege.	Total.
	Kilograms.	*Kilograms.*	*Kilograms.*	*Kilograms.*
France	1,447	111	82	1,640
Italy	324,838	113,838	45,863	484,539
China	21,228	131,304	214,227	366,759
Tussah	1,988	3,212	9,152	14,352
Japan	9,359	151,662	147,904	308,925
Other	1,047	1,695	400	3,142
Total	359,907	402,822	417,628	1,179,357

Of this total amount, 912,835 kilograms were conditioned and delivered, over 63 per cent going to Zurich factories, about 27 per cent to dealers and twisters, and the remainder being shipped elsewhere.

SILK-TWISTING.

The continued fall in raw-silk prices seriously affected this branch during 1891. As regards tram-twisting, it may be stated that it was much injured by the existing feeling of discouragement and the small confidence felt in the firmness of prices. The unsettled condition of the commercial treaties with Germany, Austria, Italy, and France also weighed upon business and prevented sales, though, it is true, the supply left over at the end of the year was not superfluously large. Nevertheless, the wrought silks lie heavily on producers' hands, the trade through middlemen has almost disappeared, and speculation has stopped.

With sewing silk it was no better. The causes of this depression are easily found, namely, the fall in silver, the heavy silk crop, and, in general, the bad state of the world's market, upon which the crises in South America, the political anxieties in Europe, and the uncertainty of customs matters exert an evil influence. And, finally, in this line as well, fashion has reduced the

consumption in a whole series of specialties, as, for instance, glove-embroidery silk, fringes, laces, braid silks, etc. By the new French treaty Switzerland loses entirely her market in France in this class of silk products. Nor does the reduction made in the new German treaty (from 1.50 francs to 1.40 francs) help the matter greatly. "Under these circumstances," says the report, "it is quite possible that silk-twisting will be discontinued in Switzerland."

SILK-DYEING.

The number of silk-dyeing establishments in the canton of Zurich remained the same as during the year previous, and all of them were kept fully busy during the entire year. Black was dyed somewhat less than last year, while dyeing in colors increased considerably. In all color dyeing, in fact, a feverish activity prevailed toward the close of the year, owing to pressing orders which had to be delivered in France before February 1 of the present year. Both in black and in colors heavier chargings were constantly called for and delivered. The dyeing process became, consequently, more complicated, but at the same time more interesting, requiring more rooms and increased and better labor. The number of persons employed in Zurich dyeing establishments has increased considerably, and wages have gone up somewhat.

SILK-FINISHING.

The finishing establishments (*appreturen*) were also pretty regularly employed during 1891. In cachenez alone, toward the close of the year, was there any falling off observable. Among the improvements introduced during the year may be mentioned machinery for handling bengaline with woolen threads, and also for rubbing and handling silk and half-silk umbrella stuffs. Arrangements are also being made for the finishing of gloria, Austria, etc., while another firm is stated to have ordered the machinery for moire antique. Hitherto Zurich has been dependent upon foreign establishments for finishing both these articles.

SILK BOLTING CLOTH.

In silk gauze business last year was less lively. The demand for work was somewhat increased by the embroidery crisis, but, owing to a diminished consumption, fewer looms were in operation than in either 1889 or 1890. Weavers' wages remained, however, unchanged, and, in addition, the manufacturers agreed, in cases where workmen were rendered unable to work by reason of illness, to pay them a certain sum per day for a certain period, and also, in case of a needy weaver's death, to pay a certain sum to those dependent on him.

GEORGE L. CATLIN,
Consul.

UNITED STATES CONSULATE,
Zurich, June 16, 1892.

COTTON MANUFACTURES IN CHINA

REPORT BY CONSUL GRACEY, OF FUCHAU.

AMERICAN CLOTH.

I have the honor to present the following additional report concerning American cotton goods in China and a new native industry in the manufacture of cotton cloth.

The annual reports of the commissioners of customs at Chinese ports show that the import of American cotton cloth in China for the year 1891 was the largest on record. The returns are as follows:

Description.	1890.	1891.
	Pieces.	*Pieces.*
Sheetings	1,201,791	2,008,455
Drills	597,903	861,591

The import of drills at the port of Fuchau was 2,143 pieces during 1890 and 3,038 pieces in 1891, being an increase of 895 pieces.

INDIAN YARN.

The tables show a still greater increase in the importation of India cotton yarn, the total of that article for all China being 1,138,000 piculs,* valued at 20,900,000 Haikwan taels, or $25,080,000 in United States money. This sum exceeds the aggregate value of the year's importations of gray and white sheetings, T cloths, and drills. There has been a marvelous increase in the import of this article. In 1882 the demand for cotton yarns was only 185,000 piculs. Last year the one province of Quang-Tong, in which Canton is situated, received 482,000 piculs. At this port the increase in these goods was as follows:

Description.	1890.	1891.
	Piculs.	*Piculs.*
Indian yarn	339	2,947
English yarn	49	380

The Indian yarn is known as 16s, and comes in bales containing 400 pounds net weight, and is delivered here at $65 in Mexican or $47.45 in American currency. At this price there seems to be no room for competition by American yarns.

CHINESE COTTON INDUSTRY.

This enormous increase of import in yarn is largely due to the fact that a great impetus has lately been given to the manufacture of a coarse cloth by natives in many parts of the Empire.

*1 picul = 133⅓ pounds avoirdupois.

In this province the viceroy, Pien, has greatly encouraged certain capitalists who were manufacturing looms for native use and putting forth great efforts to introduce them in the homes of the people, as well as starting what they call cotton factories.

The viceroy made a report to the Emperor in regard to this new industry, and received instructions to release it from the burdensome likin tax which cripples every industry of China. His petition was as follows:

Fo-Kien is a maritime province, and by no means fertile. The mass of the population find it difficult to obtain means of subsistence, being in an unusual state of poverty. The method of planting cotton and of weaving they have not taken pains to study. They are entirely dependent upon the importation of cotton from Kiang-See and Che-Kiang. Millions of dollars are expended annually for the gradual improvement of the condition of the people of Fo-Kien. Your servant therefore established a cotton mill in Fuchau after consultation with the native gentry. Apprentices were engaged, and weaving instruments were purchased. These apprentices were paid wages and were given three months' time within which to acquire thorough knowledge of weaving. They were then allowed to take with them a weaving machine and do the weaving at home. Some months afterward it was found that each apprentice could manufacture more than 20 pieces of cloth every month. Your servant appropriated a certain amount of public funds for the expense of the mills, and the gentry also assisted in raising capital by selling shares.

It is now two years since its establishment and very many in this city and other places have tried to work on the same principle, so that now over 4,000,000 pieces are being manufactured annually in this city alone. The poor people therefore have occupation and means of support. The industry thus gradually extended, it is believed, will become more and more prosperous.

Last year the gentry represented to me that the native cotton cloth was made of imported cotton yarn, upon which import duty was charged; besides this, likin was also levied on the manufactured cloth. By paying this double duty the price ran high, and the sales naturally became slow, as the goods were not fine. The gentry then requested that the cloth might be exempt from the likin duty. In compliance with my instructions, the commissioners and taotais of the likin bureau reported to me after deliberation that the cloth manufactured in the Government establishments, not amounting to much, might be exempt from payment of likin for a time, and the sum payable by private establishments might be reduced to 60 per cent of the former charges, etc. It is now nearly a year since, and it has been proved that the manufacture of the Government establishment pays handsomely, while but little profit accrues to private establishments. It seems we can not but think of reducing the likin taxes.

He then quotes an imperial edict sanctioning the proposal of the governor of Quang-See in regard to export duty on silk goods, and continues:

Your servant, therefore, wishes to know whether Your Majesty will graciously permit the cotton yarn imported for native manufactories to be exempt from likin, and that export duty be reduced to 40 per cent of the amount formerly charged, as has been done for the governor and people of Quang-See in the case of exported silk goods.

The Emperor issued an edict granting this request, and the manufacture and sale of these goods have greatly increased.

I have visited and inspected some of these so-called Government mills. I found the largest to be carried on in a large, ordinary Chinese house on the ground floor. The plant consisted of eighteen looms. These are made

of wood and are heavy and rough in workmanship. I inclose a drawing of one of the looms, with a little-footed woman at work, and also a sample of the cloth. I found the operatives to be young men under 20, old men over 50, and women of all ages. They earn from $4 to $6 per month, which is very good wages for native labor in this country. The cloth, as you will see, is rather coarse, but closely woven, and is such as is used very generally by the coolie class. It is 13 inches wide, and each piece measures a little over 7 English yards, and can be bought for 38 or 40 cents in the currency of the country, which equals about 28 and 30 cents in American money, or from 4 to 4½ cents per yard.

Very many of these looms are being made by a company of the gentry, who lease or sell them to private parties for use in their own homes. They can be purchased for about $4 in Mexican or $2.90 in American money. The shuttle is thrown by hand and the treadle worked by the feet. They could be improved very easily so as to double the quantity of cloth produced; but the great object in China is to furnish employment to as many persons as possible and not to cheapen products. A mill having steam power and running scores of looms would not be allowed introduction in this city or province. They do not want, and will not have, any labor-saving machines. As an evidence of this, I may state that in all the city of Fuchau, with its million of inhabitants, there is not a single pump or windlass used in getting water from their wells, but all water is drawn up by a small pail at the end of a rope, just as was done in the days of Abraham, and if a pump was forced upon them it would not be used.

I am continually in receipt of circulars and letters from manufacturers of simple and useful things at home asking if there is any market for such articles in this country, and am sorry that I am forced to reply that there is not. Although nearly all the people use flint and steel in kindling fires, some matches of German and Japanese manufacture are being sold, but not one person in a thousand will resort to their use.

SAMUEL L. GRACEY,
Consul.

UNITED STATES CONSULATE,
Fuchau, May 25, 1892.

COMMERCE AND NAVIGATION AT GIBRALTAR.

REPORT BY CONSUL SPRAGUE.

The condition of this market with regard to produce generally imported from the United States has not experienced much change since I last had the honor of addressing the Department on the subject. The tobacco trade remains at this moment somewhat dormant, while quite an active business is being kept up in flour, which continues to be imported in increased quantities direct from New York by British and Italian steamships. But for these supplies the stocks of flour would be greatly reduced, as the importa-

tions from other quarters, such as England, France, and Algeria, have for some time past been on a very moderate scale.

It is now generally reported that the Russian ports in the Black Sea have just been reopened for the exportation of wheat and other cereals, with the exception of rye. If such be the case, we may expect to see some change in the leading markets of Europe for the sale of flour. In the meantime considerable hard wheat is now arriving at this port direct from British India by steamships, imported on joint account between speculators in this market and Spanish traders residing in the neighboring Spanish towns, where the greatest portion of these foreign importations of wheat is now finding its way to meet the actual wants of the Spanish millers, who find it most to their advantage to mix this Indian wheat with their own domestic kinds, especially at this moment, when their stocks of the latter are considerably reduced and the prospects for fair crops during the present harvest being unpromising.

The gradual decline in steam navigation throughout the Mediterranean and the Levant ever since the Black Sea ports have been closed to the exportation of cereals has had the corresponding effect of diminishing the number of steamships entering this port since the commencement of the present year, besides limiting its coal business considerably. This decline in the coal trade, which forms the principal commerce of this port, is severely felt and causes considerable distress among the working and poorer classes, while the coal merchants themselves can now hardly make the business pay; in fact, the civil population of Gibraltar is at this moment being considerably tried by various local municipal ordinances and by-laws relating principally to sanitary affairs, causing increased expenses to the proprietors holding real estate here, and in such an aggravated form as to have aroused the attention of the imperial Government upon the subject.

The matter has lately been discussed in the British Parliament, and a blue book issued containing some parts of the leading correspondence, together with the result of an interview had between a Gibraltar deputation, sent to London at the expense of most of the civil population of Gibraltar, and the secretary for the colonies.

What the issue of this unsatisfactory state of affairs may be the future alone will disclose; it must, however, be a source of some anxiety to all concerned, including the governor of this fortress, whose position under existing circumstances can scarcely be envied.

There is every probability of the Algeciras Railway, which is approaching completion toward Bobadilla in connection with the Madrid and Malaga Railroad, being opened throughout for public traffic by November next, thus opening a new and direct overland highway to the Continent and offering an advantage which travelers and tourists will no doubt very soon fully enjoy and appreciate.

HORATIO J. SPRAGUE,
Consul.

UNITED STATES CONSULATE,
Gibraltar, July 2, 1892.

TUSSAH SILK.

REPORT BY CONSUL-GENERAL MERRILL, OF CALCUTTA.

The tussah silkworm, or *Antheræa mylitta*, is variable in appearance, feeds on many different plants, and is found in a wild state in jungle land in all parts of India up to an elevation of 4,000 or 5,000 feet.

The cocoons always have a market price, and are collected by jungle tribes wherever sufficient quantities can be found to be worth carriage, while the insect is regularly cultivated on the Central Indian plateau for the production of silk.

The moths emerge from their cocoons in the beginning of the rains (June), mate, and lay eggs. From these eggs emerge caterpillars, which, when full grown, spin cocoons producing moths about August. These moths lay eggs, which furnish the worms of the second generation, and these worms spin at the end of the rains (September), yielding the cocoons which in their natural state remain on the trees throughout the winter and produce moths in the beginning of the following rains (June).

Each cocoon is attached to the food plant by a silken stem of singular strength and neatness, is hard and compact in structure, and contains a large amount of coarse, strong, buff-colored silk that might almost be called brilliant. The cocoons can be reeled, but have first to be subjected to some powerful solvent like caustic potash to separate the threads.

When proper attention is paid to the rearing of the tussah silkworm, and under favorable circumstances, it is said that about eighty worms can be raised from the eggs of one female, and that about 44 per cent of the cocoons produce female moths.

The caterpillars molt five times, at intervals of from five to eight days. When first hatched they weigh but one-fifth of a grain and are about a quarter of an inch long, but at the end of their larval existence, which extends from forty to forty-five days, they are sometimes 7 inches long, an inch in diameter, and weigh about 370 grains.

At this period they begin to spin their cocoons, from which the moths soon emerge to lay the eggs, and from these at the end of the rains the main crop of cocoons is raised.

The men engaged in the silk industry carefully watch over and protect the worms, and while rearing is going on live with great cleanliness and self-denial, abstaining with ascetic rigor from the gratification of their appetites and adhering very strictly to certain ceremonial observances.

The business is a very precarious one, much depending on favorable weather, any stoppage of the rain being most injurious to the worms, especially if it occurs when molting is going on.

In attempts made in the Indian museum in Calcutta to raise tussah worms in captivity in perforated zinc breeding cages it was found that, though the

eggs hatched readily, producing vast numbers of apparently healthy worms, the worms invariably died, although supplied with plenty of fresh food. At length daily watering of the worms with a watering pot was tried, in imitation of the heavy rain to which they are exposed in their native jungles, and it was found that when regularly watered they could be easily raised through all their stages.

The insects are subject to the attacks of enemies of various kinds. The moths are said to be eaten by bats, rats, and ants while they are hanging to the cocoons. It is asserted that the caterpillars are eaten by snakes, rats, toads, ants, and also by hemipteral insects. They also perish in large numbers from the attacks of *Ichneumonidæ* and *Tachinæ*, which are parasitic on them; while in the Central Provinces, it is stated, they are particularly liable to disease, it being no uncommon occurrence for the whole crop of worms to die off, leaving the owners without any return whatever for their time and labor.

The chrysalides inside the cocoons intended for reeling are generally killed by steaming, and the cement of the cocoon is softened in some alkaline solution, such as that obtained by mixing the ashes of the dried seed pods of the pulse *Phaseolus radiatus* in boiling water.

The native mode of reeling the thread of silk from the cocoon is very simple, reminding one of a boy winding his kite string on a stick. In some instances the silk is reeled from the cocoon round the naked kneecap of the reeler.

Not much silk is woven by the natives, and the quality of what is manufactured is inferior.

Manchester goods are often exhibited and sold here as articles made in this country.

The atlas moth (*Attacus atlas*), though found in the Madras Presidency, is not abundant, nor are the cocoons thereof collected. The cocoons are of a very dark brown color and are invariably hidden by leaves, which the larva gums around itself when it begins to spin. When about to undertake this final work, it invariably commences by drawing together the edges of the largest leaves it can find, attaching them to one another by silken threads. Within this leafy screen the cocoon is rapidly perfected, and if afterwards removed from this environment it will be found that it has exactly taken the shape of the leaves.

This meager and unsatisfactory report has been delayed month after month that it might embody important information promised again and again. Should this be received, it will be forwarded, with samples of cocoons and silk; which also have been proffered, but have never been supplied.

SAMUEL MERRILL,
Consul-General.

UNITED STATES CONSULATE-GENERAL,
Calcutta, June 13, 1892.

WAGES IN GERMANY.

REPORT BY CONSUL WAMER, OF COLOGNE.

The bureau of states attorneyship of the various trade unions of Germany has just compiled some very interesting statistics on the wages earned throughout Germany during the year 1891. The statistics were collected by the various trade unions at the request of said bureau, and they embrace the replies from 906 cities and 924 unions. The figures show that wages have increased in only 7 cities, in 229 they have declined, and in 670 they have remained stationary. In 216 of the 906 cities want of employment existed for a longer or shorter period. The machine industry, representing 400 local unions, with 20,000 members, shows that there were only two places in which the wages have risen; in 72 they have declined, and in 232 they have remained stationary, while food products have been dearer.

Aix la Chapelle, Berlin, Breslau, Buckau, Dortmund, Dusseldorf, Duisburg, Erfurt, Essen, Heilsbronn, Leipsic, Magdeburg, Nuremberg, Oberhausen, and Steele, the centers of the machine industry, show a decrease in the wages. Only 211 places out of 306 cities showed full employment, while in 30 places almost complete stoppage of work existed.

A Berlin machine worker writes:

A family of five persons requires per week: For food articles, $3.61⅛;* for house rent, $1.32½; for contribution to sick and invalid fund, 40.5 cents; for taxes, 11.8 cents; for newspapers, etc., 8.4 cents; for clothing, 96.4 cents; total, $6.50⅞, or $338.16 per year. By continued work such a workman earns during the year $250.60.

A Berlin bricklayer writes:

A bricklayer or carpenter earns per year, less the frosty and rainy days, $253. His family of seven persons needs yearly for food articles $200.48; for rent, $65.06; taxes and contributions, $11.80; clothing, etc., $24.09; total, $301.45. The deficiency must be made up from what the wife can earn by sewing, etc.

A bricklayer in Erlanger writes:

I keep an exact account of wages earned and cost of living. My family consists of myself, my wife, and five children of 3, 5, 7, 15, and 18 years of age. In 1891 I earned as first workman in a stone quarry $232.53 (ordinary workmen earn from $180.72 to $187.95). My cost of living for the year was as follows: For food articles, $238.31; clothing, $56.87; fires, $11.80; shoes, $29.39; beer, $27.95; rent, $28.92; total, $393.25. The deficiency of $160.72 had to be made up by the amount earned by my wife and children.

In the eastern and western parts of Germany, as well as in the northern and southern parts, the workman alone can not earn sufficient to support his family. It can be reckoned as requiring, on an average, for a family of four persons, $3.37 for food articles per week, and from $3.61 to $3.85 for rent for a tolerably good house per month. This makes for food articles and for house rent a minimum of $216.86, and the earnings can be taken at a maximum of $162.65.

* Reckoned from the mark at the rate of 4.15 marks to the dollar.

A machine worker in Essen writes:

A family of four persons earns yearly $270.60 and expends for house rent $39.75; for food articles, $192.77; clothing, etc., $48.19; for taxes, $6.50; for insurance contribution, $18.89.

This shows a deficiency of $30.70.

WM. D. WAMER,
Consul.

UNITED STATES CONSULATE,
Cologne, July 23, 1892.

THE TRANSSIBERIAN RAILWAY.

REPORT BY SECRETARY OF LEGATION WURTS, OF ST. PETERSBURG.

I have the honor to transmit a copy and translation of an article from the Journal de St. Petersburg of the 5–17th instant relating to the inauguration of the work on the section of the Transsiberian Railway between Cheliabinsk and Omsk, which may be of interest to the Department.

GEORGE W. WURTS,
Secretary of Legation.

UNITED STATES LEGATION,
St. Petersburg, June 21, 1892.

TRANSSIBERIAN RAILWAY.

[Inclosure in Mr. Wurts's report.—Translation.]

The Messager Officiel publishes the decision of the council of ministers, bearing the imperial sanction dated the 8–20th of May, ordering the inauguration during the current year of the works, to be executed by the State, on the section of the great transsiberian line between Cheliabinsk and Omsk. All the organs of the press warmly welcome this decision. The New Times (Novae Vremia) devotes two articles to it.

This section of the Siberian railway, passing by Koorgan, Petropaulovsk, and Omsk, will have a length of 477 versts; and the expense of construction, including the rolling stock and two metal bridges on the Tobol and Ischim, is estimated at 22,333,000 rubles, which thus makes less than 30,000 rubles per verst. Notwithstanding the economy with which this line will be built, it is nevertheless decided that the distance between stations shall not exceed 50 versts. The trains will travel at the rate of 20 versts an hour.

Thanks to this cheapness of construction, the State will have little to advance, and that only during the first period. As to the expense of running, it will soon be covered by the receipts of the line. The New Times is specially delighted that the construction of the line will be by the Government alone, thus setting aside the cupidity of speculators, Russian as well as foreign. One contemporary would like the Government to abandon the system of supplies by adjudication and to make its own purchases.

It is stated that the Government will build all the line across Siberia in the period of six years. If the achievement has to be awaited a year or two longer, the results obtained would be no less marvelous. At this moment the detailed studies of the line traced are finished to the one thousand and fiftieth verst from Cheliabinsk, and beyond the region of the future line

has been sufficiently explored on an extent of 1,508 versts to the River Tom, which the road will cross at 84 versts from Tomsk.

Next year, probably, the construction of the section from Omsk to the Tom will be begun. Taking Zlatoosk as the point of departure of the transsiberian line, it will be found that at the present moment 900 versts to Omsk and nearly 400 versts from Vladivostok to Grafskoe are already under construction. During the summer of next year there will be work upon 750 other versts. At the same time the two extreme sections at the extremities of the line will be open to circulation. These 1,650 versts form together only one-fourth of all the line of the transsiberian road from Zlatoosk to Vladivostok, which from the River Tom to Grafskoe has a length of 4,500 versts (to Sretensk alone 2,500 versts).

In the success of the future railway, and that it may as soon as possible be of benefit to the whole Empire, the ministry of domain will have to bestir itself. It will be necessary to populate the approaches to the transsiberian line. This will not be very difficult, the movement of emigration toward these regions, as we pointed out yesterday, being irresistible. There is nothing astonishing in that when one thinks that the natural increase of the population of Russia is from 1,600,000 to 2,000,000 inhabitants a year. The United States have shown to us how things should go after the construction of an immense line of railway, the benefit to the country and to the line itself, which only in this way can count upon a local traffic of importance, both of travelers and of merchandise.

The [Russian] Gazette of St. Petersburg, which discusses the same question, suggests, on account of the difficulty of obtaining laborers in Siberia, the use of the prison population, which at this time leads an unproductive existence, or nearly so, on the island of Saghalin. In utilizing it a great service would be rendered to the country and amelioration effected in the condition of the exiles.

CANARY ORCHILLA.

REPORT BY VICE-CONSUL LALLIER, OF TENERIFFE.

I have the honor to report that, after having received information from the seven islands about the orchilla weed, I have found that it is not planted in any of the islands, but that it grows spontaneously in all. It is, however, mostly found on the rock in Lanzarotte, Fuerteventura, Gomera, and Teneriffe, where it is picked by poor people. Its price is about 12 cents per pound, and the exports about 60,000 pounds a year, although the export does not reach 15,000 pounds in some years.

I will try to plant this weed; but I do not expect good results, because it is always found on very high rocks vertically cut and never on cultivated land. The gatherers swing by ropes down the sides of the rocks.

It is exported chiefly to Bremen, and the only exporters are Pedro Foronda and myself at Teneriffe and Jorge Rodriquez and Miller & Co. at Grand Canary.

It is bought in a dry state and is packed in large bags to be shipped.

PHILIBERT LALLIER,
Vice-Consul.

UNITED STATES CONSULATE,
Teneriffe, May 12, 1892.

COMMERCE OF THE DANISH WEST INDIES.

REPORT BY CONSUL HORNE, OF ST. THOMAS.

This report will be brief, in view of the fact that the conditions are about the same as when my last report was written, which was full and complete and covered every matter of interest.

The Government does not keep a record of exports, but the consular records show an increase over last year of exports to the United States.

The health of the island has been remarkably good during the past year. There has not been a case of yellow fever or smallpox.

The population is decreasing. Most of those leaving the island seek a home in the United States.

Table showing the imports into St. Thomas during the year ended March 31, 1892.

Articles.	From—				
	United States.	Great Britain.	France.	Germany.	Denmark.
Cloth goods:					
Linen	$11	$4,600	$4,037	$794	$22
Cotton	8,845	95,656	9,552	3,754	54
Woolen	179	7,076	3,138	2,116	30
Silk	.....	1,599	4,148	564	29
Mixed	.....	72	.....	206	.....
Ready-made clothes	382	5,640	6,798	595	1,429
Salted and smoked beef	2,085	4	.....	13	36
Tongues and sausages	181	92	127	154	982
Salted and smoked pork	6,628	50	.....	.....	.....
Hams	3,119	563	.....	.....	351
Butter	10,585	313	.....	2,443	5,733
Cheese	1,421	5	159	5,609	109
Lard	7,303	18	.....	.....	.....
Beans and peas	4,534	3	.....	.....	.....
Wheat and corn	3,072	.....	.....	.....	.....
Barley	7	268	.....	149	2
Oats	281	.....	.....	344	.....
Yams and potatoes	244	.....	798	440	22
Bread	2,617	965	.....	62	6
Tea	238	488	.....	1,189	1
Canned goods	1,746	4,484	2,711	647	337
Corks	.....	.....	472	140	70
Copper	.....	723	.....	.....	.....
Lead	.....	334	.....	.....	.....
Iron	100	6,790	673	39	.....
Nails	286	635	.....	59	.....
Hardware	3,671	10,749	900	2,583	20
Earthenware	51	692	296	710	57
Flour:					
Wheat	63,341	.....	.....	.....	.....
Rye	6,298	.....	.....	41	.....
Corn meal	8,662	.....	.....	.....	.....
Sugar, refined	6,263	2	.....	85	.....
Fish:					
Salt	144	.....	.....	54	1,216
Pickled	102	17	.....	.....	8

Table showing the imports into St. Thomas during the year ended March 31, 1892—Cont'd.

Articles.	From—				
	United States.	Great Britain.	France.	Germany.	Denmark.
Boots and shoes	$3,225	$4,603	$11,275	$3,233	$75
Saddlery	270	423	121	.....	194
Leather	2,267	77	598	425	.....
Glassware	879	421	381	112	10
Paper	616	718	1,272	764	335
Playing cards	14	.....	.....	126	.....
Lumber	5,611	230	.....	.....	.....
Shingles	343	.....	.....	.....	.....
Cement	.....	.....	.....	3,220	.....
Bricks	.....	.....	.....	100	.....
Marble	425	185	.....	.....	.....
Tapestry	22	27	222	85	.....
Floor mats	10	21	.....	.....	.....
Whisky	720	4,099	279	.....	.....
Brandervin	.....	.....	.....	174	535
Wine	230	915	9,253	2,486	125
Brandy	.....	1,265	4,099	157	.....
Gin	.....	.....	.....	15,383	.....
Spirits	1,253	.....	.....	10,933	.....
Cherry cordial	.....	.....	.....	1,524	300
Sweet liquors	.....	1,548	2,036	7,442	84
Beer	.....	1,993	83	3,012	5,247
Rum	1,324	.....	.....	.....	.....
Rope	1,223	747	6	105	845
Vinegar	192	3	343	15	.....
Coffee	.....	22	78	.....	.....
Rice	.....	495	.....	7,880	.....
Spices	45	193	.....	624	.....
Tobacco:					
Loose	2,471	.....	.....	190	231
Manufactured	5,016	144	22	.....	.....
Cigars	2,644	185	3,229	1,976	1,746
Coal	140,733	36,696	.....	.....	.....
Paints	613	2,480	36	213	6
Sweet oil	3,413	984	2,502	255	.....
Petroleum	2,945	.....	.....	.....	.....
Soap	1,347	8,009	76	2,780	217
Candles	390	41	.....	2,485	.....
Starch	3,103	.....	.....	.....	.....
Raisins and currants	31	162	.....	99	.....
Figs	.....	35	.....	5	.....
Prunes	.....	242	47	5	.....
Dates	.....	60	.....	.....	.....
Almonds	.....	26	.....	130	.....
Nuts	174	8	.....	26	.....
Olives	.....	84	.....	.....	.....
Sago	10	45	.....	163	.....
Saloop	.....	37	.....	.....	.....
Vermicelli	.....	.....	784	24	.....
Powder	16	170	296	2,689	.....
Drugs	1,521	2,118	656	1,733	40
Jewelry	156	1,289	1,752	12	109
Perfumery	1,745	320	1,691	517	8
Fancy goods	1,415	6,044	5,124	4,552	392
Oysters	117	.....	.....	.....	.....
Hats:					
Straw	370	1,273	556	398	.....
Felt	232	1,138	539	114	3

Table showing the imports into St. Thomas during the year ended March 31, 1892—Cont'd.

Articles.	From— United States.	Great Britain.	France.	Germany.	Denmark.
Poultry	$16	.....	.....	.....	.....
Sheep and goats	105	.....	.....	.....	.....
Furniture	1,471	$406	$613	$1,877	.....
Carriage material	693	.....	.....	.....	.....
Tar and pitch	88	.....	.....	.....	$53
Resin and turpentine	78	10	.....	.....	.....
Ships' material	345	.....	.....	1,091	.....
Salt	.....	73	.....	.....	.....
Ice	2,946	.....	.....	.....	.....
Onions	.....	.....	677	.....	.....
Miscellaneous	5,732	5,997	2,357	2,813	987
Total	341,002	227,893	84,812	104,831	22,056

Articles.	From— Spanish West Indies.	Other islands of the Danish West Indies.	Other countries.	Total.
Cloth goods:				
Linen	.....	$16	$9	$9,489
Cotton	.....	230	212	118,303
Woolen	.....	.....	3	12,542
Silk	.....	.....	16	6,356
Mixed	.....	.....	.....	278
Ready-made clothes	.....	5	55	14,904
Salted and smoked beef	.....	14	39	2,191
Tongues and sausages	.....	16	14	1,566
Salted and smoked pork	.....	95	146	6,919
Hams	.....	67	10	4,110
Butter	.....	98	4,605	23,777
Cheese	.....	90	249	7,642
Lard	.....	196	110	7,627
Beans and peas	$493	115	3,250	8,395
Wheat and corn	237	63	110	3,482
Barley	.....	.....	3	429
Oats	.....	30	.....	655
Yams and potatoes	304	27	5,265	7,100
Bread	.....	33	150	3,833
Tea	.....	.....	.....	1,916
Canned goods	149	51	67	10,192
Corks	.....	.....	.....	682
Copper	.....	.....	.....	723
Lead	.....	.....	.....	334
Iron	.....	6	.....	7,608
Nails	.....	.....	.....	980
Hardware	.....	225	39	18,187
Earthenware	.....	58	9	1,873
Flour:				
Wheat	688	3,566	4,156	71,751
Rye	.....	102	.....	6,442
Corn meal	.....	329	142	9,133
Sugar:				
Refined	.....	693	48	7,091
Raw	18,720	5,545	3,861	28,126

Table showing the imports into St. Thomas during the year ended March 31, 1892—Cont'd.

Articles.	From—			Total.
	Spanish West Indies.	Other islands of the Danish West Indies.	Other countries.	
Molasses	$12	$129	.....	$141
Fish:				
Salt	135	.....	$10,566	12,115
Pickled	.....	.....	6,524	6,651
Boots and shoes	.....	121	12	22,544
Saddlery	35	30	20	1,093
Leather	.....	40	6	3,413
Glassware	.....	60	30	1,893
Paper	.....	20	45	3,770
Playing cards	.....	.....	.....	140
Lumber	.....	21	1,567	7,429
Shingles	.....	.....	1,865	2,208
Lime	.....	1	14	15
Cement	.....	.....	.....	3,320
Hard wood	.....	7	130	137
Bricks	.....	72	.....	172
Marble	.....	.....	5	615
Tapestry	.....	.....	.....	356
Floor mats	.....	.....	.....	31
Whisky	.....	.....	.....	5,098
Brandervin	.....	.....	.....	709
Wine	27	164	227	13,427
Brandy	.....	.....	40	5,561
Gin	.....	.....	1,301	16,684
Spirits	.....	.....	264	12,450
Cherry cordial	.....	.....	.....	1,824
Sweet liquors	35	46	2,511	13,702
Beer	.....	346	257	10,938
Rum	5,112	6,162	4,436	17,034
Rope	.....	.....	.....	2,926
Vinegar	.....	.....	.....	553
Coffee	1,508	.....	6,457	8,065
Cocoa	.....	.....	286	286
Rice	.....	12	75	8,462
Spices	.....	3	26	891
Tobacco:				
Loose	.....	667	240	3,799
Manufactured	.....	943	140	6,265
Cigars	25,350	15	972	36,117
Fruit, fresh	982	128	693	1,803
Coal	.....	.....	106	177,535
Paints	.....	.....	6	3,354
Sweet oil	.....	156	140	7,450
Petroleum	.....	.....	.....	2,945
Soap	.....	.....	9	12,438
Candles	.....	70	299	3,285
Starch	277	32	88	3,500
Raisins and currants	96	3	308	699
Figs	.....	.....	32	72
Prunes	.....	.....	29	323
Dates	.....	.....	.....	60
Almonds	.....	.....	.....	156
Nuts	.....	38	137	383
Olives	16	.....	.....	100
Sago	.....	.....	.....	218

Table showing the imports into St. Thomas during the year ended March 31, 1892—Cont'd.

Articles.	From—			Total.
	Spanish West Indies.	Other islands of the Danish West Indies.	Other countries.	
Saloop	.....	.....	$77	$114
Vermicelli	.....	.....	42	850
Powder	.....	.....	.....	3,171
Drugs	.....	.....	249	6,317
Jewelry	.....	.....	3	3,321
Perfumery	$1,640	$195	731	6,847
Fancy goods	.....	39	594	18,160
Oysters	.....	.....	1	118
Hats:				
Straw	.....	2	14,195	16,788
Felt	.....	2	.....	2,022
Poultry	.....	21	116	153
Horses	70	550	325	945
Cattle	8,606	10	12,689	21,305
Sheep and goats	.....	555	1,453	2,113
Swine	.....	12	1,692	1,704
Furniture	.....	139	67	4,573
Carriage material	.....	200	12	905
Tar and pitch	.....	.....	.....	141
Resin and turpentine	.....	.....	.....	88
Ships' material	.....	.....	3,588	5,024
Salt	.....	10	270	353
Charcoal	4	477	2,141	2,622
Ice	.....	.....	.....	2,946
Onions	1,180	.....	267	2,124
Miscellaneous	251	433	3,934	22,504
Total	65,927	23,602	104,877	974,999

Table showing the exports from the consular district of St. Thomas to the United States during the year ended March 31, 1892.

Articles.	Quarter ended—				Total.
	June 30, 1891.	September 30, 1891.	December 31, 1891.	March 31, 1892.	
Bay oil	$563.53	$3,798.97	$550.13	.....	$4,912.63
Bay rum	4,088.20	.....	3,029.47	$1,901.07	9,018.74
Bay spirit	.....	.....	189.09	.....	189.09
Brandy	.....	.....	1,746.68	.....	1,746.68
Hides and skins	1,744.08	1,708.84	476.07	1,099.30	5,028.29
Miscellaneous	12.68	.....	.....	.....	12.68
Rum	894.22	75.18	915.51	545.87	2,430.78
Shells, turtle	2,197.25	.....	386.15	2,521.97	5,105.37
Wearing apparel and effects	.....	.....	.....	142.35	142.35
Whisky	7,619.93	22,515.01	14,309.57	.....	44,444.51
Wine	14.72	28.56	.....	51.39	94.67
Total	17,134.61	28,126.56	21,602.67	6,261.95	73,125.79

Table showing the navigation at the port of St. Thomas for the year ended March 31, 1892.

Countries.	Entered.				Cleared.			
	Steamers.		Sailing vessels.		Steamers.		Sailing vessels.	
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
American.								
Africa			6	2,615				
Azores			1	328				
Brazil	2	3,451	1	628			2	1,066
British Guiana			4	1,719				
British West Indies	25	59,431	5	2,173	25	58,830	14	8,108
Danish West Indies							2	505
Dutch West Indies			1	372				
French Guiana			3	755				
French West Indies			12	4,786	1	2,806		
Mexico							2	566
Portugal			2	921				
Santo Domingo							2	654
Spanish West Indies							22	10,650
United States	26	61,636	25	14,127	27	62,882	15	6,484
Venezuela			1	523				
Total	53	124,518	61	28,947	53	124,518	59	28,033
Austrian.								
British West Indies							1	600
France			1	667				
French West Indies			1	387				
Germany			1	596				
Great Britain			1	600				
United States							3	1,650
Total			4	2,250			4	2,250
British.								
Africa			2	525				
Brazil	3	3,962	1	459	1	1,441		
British Guiana	1	1,043	5	949				
British West Indies	57	47,259	15	2,959	80	82,262	3	896
Colon					1	2,085		
Danish West Indies	4	892	1	236	3	1,693	1	311
France					1	2,095		
French West Indies	1	2,095	7	1,173	2	2,318	1	148
Germany	1	900						
Great Britain	19	34,044	3	1,394	2	1,704	2	569
Halifax	12	14,104			1	1,180		
Haiti	2	4,190			3	6,565		
Mexico					1	900		
Prince Edward Island							1	199
Santo Domingo	1	2,095			1	2,095	3	649
St. Vincent	1	1,477						
Spain	1	1,214						
Spanish West Indies	2	446	1	296	19	20,483	30	6,884
Teneriffe	1	1,474						
United States	18	22,118	8	2,384	10	12,434	2	732
Venezuela			1	371				
Total	124	137,313	44	10,737	125	137,255	43	10,318
Danish.								
Brazil			2	598				
Denmark			1	240				
Spanish West Indies							2	474
United States							1	596
Total			3	838			3	1,070

Table showing the navigation at the port of St. Thomas, etc.—Continued.

Countries.	Entered.				Cleared.			
	Steamers.		Sailing vessels.		Steamers.		Sailing vessels.	
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
Dutch.								
Africa	.....	.....	1	929	.....	.....	.....	.....
Germany	.....	.....	1	304	.....	.....	.....	.....
Great Britain	.....	.....	.....	.....	.....	.....	1	929
United States	.....	.....	.....	.....	.....	.....	1	304
Total	.....	.....	2	1,233	.....	.....	2	1,233
French.								
France	11	17,896	.....	.....	7	11,361	.....	.....
French West Indies	14	9,831	.....	.....	13	8,240	.....	.....
Santo Domingo	2	3,241	.....	.....	.....	.....	.....	.....
Spanish West Indies	22	22,853	.....	.....	29	34,220	.....	.....
Total	49	53,821	.....	.....	49	53,821	.....	.....
German.								
Brazil	.....	.....	2	955	.....	.....	.....	.....
British West Indies	.....	.....	1	519	.....	.....	.....	.....
Germany	68	105,052	1	956	61	88,560	.....	.....
Great Britain	.....	.....	.....	.....	.....	.....	1	423
Haiti	29	41,836	.....	.....	11	16,826	.....	.....
Santo Domingo	10	15,287	1	423	13	20,464	.....	.....
Spanish West Indies	20	28,645	.....	.....	42	65,213	1	350
United States	.....	.....	1	889	.....	.....	3	1,911
Venezuela	2	2,792	1	350	2	2,549	.....	.....
Total	129	193,612	7	4,092	129	193,612	5	2,684
Haitian.								
Haiti	1	145	.....	.....	1	145	.....	.....
Norwegian.								
Africa	.....	.....	4	1,877	.....	.....	.....	.....
Brazil	.....	.....	31	14,253	.....	.....	.....	.....
British Guiana	.....	.....	1	427	.....	.....	.....	.....
British West Indies	.....	.....	1	357	.....	.....	6	2,593
Buenos Ayres	.....	.....	1	892	.....	.....	.....	.....
Danish West Indies	.....	.....	1	381	.....	.....	1	280
Dutch West Indies	.....	.....	.....	.....	.....	.....	1	240
France	.....	.....	4	2,549	.....	.....	.....	.....
Germany	.....	.....	6	2,449	.....	.....	.....	.....
Great Britain	.....	.....	5	3,451	.....	.....	.....	.....
Haiti	.....	.....	.....	.....	.....	.....	9	4,301
Holland	.....	.....	1	240	.....	.....	.....	.....
Honduras	.....	.....	.....	.....	.....	.....	1	631
Mexico	.....	.....	.....	.....	.....	.....	2	615
Portugal	.....	.....	1	290	.....	.....	.....	.....
Santo Domingo	.....	.....	.....	.....	.....	.....	1	458
Spain	.....	.....	1	580	.....	.....	.....	.....
Spanish West Indies	.....	.....	.....	.....	.....	.....	14	5,587
United States	.....	.....	.....	.....	.....	.....	26	15,000
Venezuela	.....	.....	2	795	.....	.....	1	263
Total	.....	.....	59	28,541	.....	.....	62	29,968
Russian.								
French West Indies	1	666	.....	.....	.....	.....	.....	.....
Haiti	.....	.....	.....	.....	1	666	.....	.....
Total	1	666	.....	.....	1	666	.....	.....

Table showing the navigation at the port of St. Thomas, etc.—Continued.

Countries.	Entered.				Cleared.			
	Steamers.		Sailing vessels.		Steamers.		Sailing vessels.	
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
Spanish.								
Spanish West Indies	3	941	1	255	3	1,050	2	588
United States			1	363				
Total	3	941	2	618	3	1,050	2	588
Swedish.								
Brazil			5	1,829				
Danish West Indies							2	717
France			2	1,513				
Portugal			1	397				
River Plate			2	582				
Spanish West Indies							5	1,642
United States							2	1,513
Total			10	4,321			9	3,872

SAM'L B. HORNE,
Consul.

UNITED STATES CONSULATE,
St. Thomas, July 26, 1892.

FREDERICKSTED.

REPORT BY CONSULAR AGENT MOORE.

Table showing the number and tonnage of vessels entered and cleared at the port of Fredericksted, St. Croix, for the year ended March 31, 1892.

Nationality.	Entered.				Cleared.			
	Steamers.		Sailing vessels.		Steamers.		Sailing vessels.	
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
American			11	2,388			5	1,070
Danish			4	944			5	870
Dutch			1	22			2	62
English	34	38,586	6	1,254	34	38,586	5	944
Norwegian			2	580				

WILLIAM F. MOORE,
Consular Agent.

UNITED STATES CONSULAR AGENCY,
Fredericksted, June 23, 1892.

ST. CROIX.

REPORT BY CONSULAR AGENT TAYLOR.

Table showing the exports from St. Croix during the year ended March 31, 1892.

Articles.	To the United States.	Total exports.
Sugar ..... pounds...	3,976,272	4,190,811
Rum ..... gallons...	19,362	44,868
Molasses ..... do.....	.....	1,151
Value of exports	$115,462	$127,350
Export duty	5,695	6,168

Table showing the custom-house valuation of imports at the port of Christiansted, St. Croix, for the fiscal year ended March 31, 1892.

From—	Value.	Duty paid.
Denmark:		
Direct	$1,484	$167
Via St. Thomas	116	14
United States	120,136	10,526
St. Thomas (a large proportion from the United States)	94,217	10,480
Other foreign countries	46,731	4,644
Total	262,684	25,842

Table showing the export duty on sugar, rum, and molasses at Christiansted.

To—	Sugar.	Rum.	Molasses.
Denmark	$598.36	$1.03	.....
Europe	2,977.79	.....	.....
United States	1,608.28	45.68	$103.01
St. Thomas	17.94	92.81	.18
Other foreign countries	1.55	.....	.....
Total	5,203.92	139.52	103.19

Table showing the exports to the United States from Christiansted, as shown by certified invoices.

Articles.	Quantity.	Value.
Sugar ..... pounds...	1,128,299	$40,324.73
Rum ..... gallons...	10,608	5,319.64
Tamarinds ..... barrels...	159	810.74
Limes ..... do.....	114	155.90
Total	.....	46,611.01

Table showing the number and tonnage of vessels entered and cleared at the port of Christiansted, St. Croix, from April 1, 1891, to March 31, 1892, inclusive.

Flag.	Entered.		Cleared.	
	No.	Tons.	No.	Tons.
Danish	12	2,015.67	12	2,015.67
Norwegian and Swedish	2	601.43	2	601.43
French	2	146.63	2	146.63
British	2	622.96	2	622.96
American	10	2,063.7	10	2,063.7
Total	28	5,450.39	28	5,450.39

JOS. L. TAYLOR,
Consular Agent.

UNITED STATES CONSULAR AGENCY,
Christiansted, June 23, 1892.

TRADE AND INDUSTRIES OF AMSTERDAM.

REPORT BY CONSUL SCHLEIER.

GENERAL CONDITIONS.

Although it must be said that the course of commerce and industry during the past year was, on the whole, disappointing and unsatisfactory, yet when the disturbing elements which interfered with prosperity are taken into account there appears less reason to doubt the existence of steady progress. Among these disturbing elements may be counted: The failure of the crops and consequent famine in Russia; the paralyzing influence of the South American monetary crisis; the disturbance and uncertainty of trade, considerably influenced by the protective measures adopted in the United States, France, and Spain; and the closing of our port by ice during the whole of the month of January, 1891.

In spite of the unfavorable influence exercised by these untoward circumstances, the amount of tonnage arriving at and departing from this port, which may be taken roughly as the measure of the extent of business doing, shows a not inconsiderable increase over that of 1890.

The conditions of our local industries have not shown any material change, either for the better or the worse, as compared with the previous year.

The retail traders and storekeepers of the city appear, on the whole, to have had a satisfactory year. There were considerably fewer failures than in the previous year. Nor has there been any marked distress among the laboring classes, always excepting that floating population which is attracted to all large cities from the agricultural districts and which is the first to suffer when work becomes at all slack.

There have been no strikes or trade disputes of any consequence to chronicle, either among artisans or laborers, nor does there at present seem any prospect of such disputes arising. The leaders of the Social Democratic

party here are active and untiring workers and agitators, but, although our laboring classes are quite ready to accept the advantages of agitation and to join in it whenever there is any prospect of advantage to themselves, they do not appear to have as yet, at all events, adopted the socialistic doctrines; and, although here, as in other great cities of Europe, imposing demonstrations were held on May 1 this year, ostensibly in favor of the eight-hour working day, it does not appear at all certain that the bulk of the working classes approve of a limitation of work to eight hours if this is to be accompanied by the prospect of any limitation of pay.

IMPORTS.

Coffee.—The course of the coffee trade in 1891 was abnormal and unsatisfactory. The high prices, especially for Java coffee, which ruled in the early part of the year gave rise to a good deal of speculation, *à la baise*, the quotation in January for delivery in November and December being fully 3 cents per pound lower than for spot delivery. A large crop was expected, but in the meantime the stocks of Java coffee were so much reduced that prices rose from 20 cents per pound in January to nearly 22 cents in April and May; in September a rapid fall to 16 cents per pound took place, followed by a recovery to about 19 cents. The fluctuations in Santos coffee were even greater. Quoted at about 16 cents per pound in the beginning of the year, it rose to 19 cents in May, to fall in September as low as 12½ cents, in consequence of a heavy drop in the markets of New York and Havre for futures, and closing in December at about 14½ cents per pound. The action of France in raising the "surtaxe d'entrepôt" on coffee from 5 francs per kilogram to 10 francs, has considerably impeded the export trade to that country. The turnover of the Amsterdam clearing office was again smaller, say: In 1891, 722,000 bags: 1890, 978,500 bags; 1889, 1,150,250 bags—showing a considerable decrease in speculative transactions.

Sugar.—The law regulating the excise on sugar was so far modified in 1891 that beet sugar enjoys slightly less protection; but there seems no prospect of diverting any of the increasing production of Java sugar to the mother country. No colonial sugar was imported in 1891. The total importation of raw sugar was 90,017 tons, of which Amsterdam took about 70,000 tons. Prices of raw beet opened in March at $3.03 to $3.06 per cwt., falling gradually to $2.88, recovering the original figure, however, in July, and advancing, in consequence of the very unfavorable weather in the autumn, to $3.72, and closing at $3.54.

Tea.—There was but little fluctuation in prices. Of China tea, Amsterdam imported 2,648 quarter chests, as compared with 3,042 quarter chests in 1890; of Java tea, 18,944 quarter chests, as compared with 30,022 quarter chests in 1890. The European consumption is comparatively a very large one, averaging for the years 1885–'89 as follows: Netherlands, 5,173,694 pounds; Germany, 3,975,882 pounds; France, 1,168,317 pounds. Java-Assam tea is preferred to the ordinary sorts, but British Indian teas find no market here. Prices remained almost without change throughout the year, between

$225.60 and $220.80 per ton. The Dutch market is losing some of its importance in consequence of direct shipments to the Mediterranean ports from the places of production.

Cocoa.—This article is continually increasing in importance, the quantity brought to this country in 1890 being 6,995 tons; to London, 10,390 tons; to Hamburg, 7,380 tons. Java cocoa now begins to be an important factor in the trade, the importation being 170 tons in 1891, as compared with 20 tons in 1888, 35 tons in 1889, and 104 tons in 1890. Ceylon sent 20,532 cwts. to Holland in 1891. The consumption increases with rapid strides, having doubled itself in England and quadrupled itself in the United States during the past ten or twelve years. The price of first quality Java varied from 22½ to 25½ cents per pound.

Indigo.—The trade in indigo was very unsatisfactory, in consequence of the entire absence of orders from Russia and the falling off in the exports of dyed goods to South America and the United States. The importation here reached 4,791 chests only, of which a large portion remained unsold at the close of the year, the fall in prices being about 25 per cent.

Rice.—The total imports of rice were 1,211,000 bags, as compared with 1,357,250 bags in 1890, of which quantity Amsterdam and Zaandam received 911,000 bags, as compared with 994,787 bags in 1890. Prices of cleaned Rangoon rice ranged from $2 to $2.80. It was anticipated that, in consequence of the hard winter of 1890–'91 and the bad harvest in Europe, the demand for cleaned rice would be good, and this expectation was partly realized; but the heavy duties imposed by some of the countries formerly purchasing largely from Holland caused the export demand to fall off very much.

Cotton.—The importation to Amsterdam amounted to 42,723 bales, against 30,931 bales in 1890. The course of the market was steadily downward until August, when, in consequence of a report of a short crop in America, a reaction took place, which lasted, however, but a short time. Middling American was quoted early in the year at 10 cents per pound, and fell in August to 8¾ cents, rising again to 9¾ cents, but closing in December at 8¾ cents. Stocks are large, and consumption has not kept pace with production. Great losses were incurred in the trade. Transactions in the clearing house reached 49,400 bales.

Tobacco.—This article was, in almost every respect, a most disastrous one in 1891. The importation was very large as compared with the previous year:

Kinds.	1890.	1891.
	Bales.	*Bales.*
Sumatra	148,689	205,104
Java	82,005	98,472
Borneo	2,243	7,607

But the quality of by far the larger proportion was beneath the average and difficult of sale. Add to this the large excess shipped to the United States in the previous year, which was far beyond any possibility of consumption

and only exported to save the increase of duty, and it is not surprising that in 1891 the exportation to the United States was only 7,360 bales, as compared with 48,182 bales in the previous year. Nevertheless, at the close of 1891 the market of Amsterdam was pretty well cleared of stock, though in most instances at a terrible sacrifice to the planters; and, as these are to a very great extent supported by Amsterdam capital, the losses which fell on the city were immense indeed. As to the quality, it becomes more and more evident that the finer descriptions of covering leaf are confined to but few districts in Sumatra and Borneo, and that on many plantations the cost of production is considerably in excess of the price which can be realized here for the ordinary descriptions produced on the same. The Java crop was also large in quantity and inferior in quality as compared with that of the previous year. The average prices realized in 1891 were: For Sumatra, about 27 cents per pound; for Java, 6½ cents per pound for Crosooh, 14 cents per pound for Bejoeki, and 17 cents per pound for Vorstenlanden. The last named is a much better crop than the two former, but neither of them is exported to the United States. The importation from Borneo was also larger than in the previous year, and the better qualities were promptly and easily disposed of, though at lower figures. The total importation amounted to 9,100 bales, against 4,810 bales in 1890, and the price for good quality was about 28 cents per pound, as compared with 32 cents per pound in 1890. This tobacco is very suitable for covering cigars, and has already made for itself an excellent reputation in this respect, and is purchased in the United States.

Petroleum.—There was some increase in the importation of Russian petroleum, of which about 22,000 barrels reached this port. American petroleum was imported nearly exclusively in tank steamers, the quantity (309,626 barrels in fourteen tank steamers) being rather less than in 1890 (315,100 barrels). Prices of American fell from $3.14 and $3.36 per cwt. in the beginning of the year to $3 and $2.92 in May, recovering slightly in July, but falling again in October to $2.92, closing at $3.20.

Wheat.—The failure of the European crops was more than counterbalanced by the surplus production of the United States, and there were considerable fluctuations in prices, with a very lively market. Small stocks in the beginning of the year, the prospect of a short crop of winter wheat all over Europe, and moderate prices encouraged consumers, as well as speculators, to large purchases from the Black Sea and the Danube. When, in the autumn months, the complete failure of the Russian crops became known and the prohibition of exportation was issued by the Russian Government, there was naturally great excitement in our markets. The exports from the Russian ports immediately before this prohibition took effect were, however, on a very large scale, and, together with the American supply, which, in consequence of the very large crop in the United States, was exceedingly plentiful, so much more than filled the deficiency anticipated that in the last weeks of the year prices began to give way rapidly and a period of serious loss to importers commenced. Besides the American supplies, British Indian

wheat, the cheapness of which attracted our consumers, was imported in large quantity. The total importation here reached 282,277 quarters, as compared with 100,634 quarters in 1890. Prices at the end of December, 1891, were as follows per quarter of 480 pounds: For Odessa, $9 to $9.60; Danube, $8.36 to $9.26; soft red Kurrachee, $8.72 to $8.90; average American, $9.08 to $9.46.

Rye.—Rye, being chiefly a Russian product, was subject to greater fluctuation than wheat, more especially as there are always large dealings in "futures" on this market. The demand from the Rhine provinces was good, the home consumption brisk, and the prohibition of exportation from Russia drove prices up so far that rye was actually quoted higher than wheat, and this disproportion continued to exist for months. A consequence hereof was a serious diminution in the consumption of rye, which was replaced by wheat and corn. At the close of the year the circumstances above referred to exercised a very depressing influence, and a rapid fall in prices commenced. Quoted at the beginning of the year at $5.62 per quarter of 480 pounds, prices rose to $10.16 per quarter in August, fell to $8.88, to rise again to $10.08, closing at about $8.76, with the prospect of a further decline.

Barley.—This article was less affected by fluctuations than wheat or rye, but still felt the influence of the general situation. Imports were, however, large, being 426,103 quarters, as compared with 328,500 quarters in the previous year. Shipments were principally from Odessa. Prices reached $7.20 to $7.44 per quarter of 480 pounds in the autumn, falling toward the close of the year.

Corn.—Very large quantities were imported from the United States, principally on speculation, in the expectation that fodder of all sorts would be scarce and dear. Prices ranged between $4.92 and $5.62 per 480 pounds, but the prospect of a very considerable oversupply depressed prices very greatly toward the close of the year.

Oats.—Prices of oats also rose very considerably, but the supplies from America were far more than sufficient to supply the deficiency of the Russian crop, and the year ended with a rapidly falling market.

Linseed.—There was again a marked increase in the importation, owing to the greater demand for linseed cake, and the prices of linseed oil were also fairly remunerative during the summer. British India sent about 62,000 tons of seed, a figure as yet unapproached. In North America the cultivation of linseed has greatly increased, and considerable purchases were made for Holland. Russian seed could not compete in price with these two sorts. Prices ranged from $9.68 to $9.72 per quarter, closing at about the latter figure.

Timber.—This trade was, on the whole, not of an unsatisfactory character in 1891. Prices were steady, with a slightly advancing tendency for sawed timber, while the price for balks rose considerably in consequence of the diminished production and importation from Sweden. The quantity imported remained about the same as in 1890. American pine timber becomes a more and more important article in our market, and the hewn balks from America

begin to replace the Rhine balks for heavy dimensions. American fir does not appear suitable to this market, the price being too dear, taking the quality and the heavy freight into consideration. Teak sleepers from Java were for the first time imported in any considerable quantity.

Coal.—In consequence of the high prices maintained by the coal and coke syndicates and colliery unions of Westphalia during the year, the importation of English coal into Holland was very considerably increased, and reached the figure of 746,000 tons, as compared with 501,000 tons in the previous year, the total consumption of the country being about 4,500,000 tons, of which, therefore, about one-sixth is supplied by England and five-sixths by Westphalia. The proportion of English coal imported has steadily increased of late.

EXPORTS.

Cattle and sheep.—The exports from this port to London alone in 1891 amounted to 9,816 head of cattle, principally calves, and 90,427 sheep.

Oils.—Although the customs duties imposed by other countries were a great hindrance to the trade, still the quantities exported were considerable; prices, however, reached a very low standard, in consequence of the lessened demand from abroad. Rape oil especially was too high in price to encourage exportation. Prices ranged from $6.20 to $7.04 per cwt. In linseed oil there was more doing, but principally on speculation. Prices were $4.06 to $5.10 per cwt.

Refined sugar.—The trade is in the hands of the four large refineries here. The majority of these maintain that it is impossible for the Dutch sugar-refining industry to hold its own in the face of the protection given on all sides by surrounding countries to the home industry, while the German refiners especially are able to work more cheaply, as their material is home produce, whereas the Dutch refiners have, for the most part, to import their raw sugar from other countries. The English market is, of course, the chief buyer. One large refinery, however, maintains that it is still possible, by means of increased production and of the adoption of every known improvement in the mode of working, to produce at a profit, especially by working up the cheaper description of raw sugar. The total export of refined sugar from Amsterdam was 85,560 tons, as against 88,017 tons in the previous year.

Liqueurs.—The exportation has not diminished, although foreign countries have materially increased their import duties; but the utmost exertions have to be made by distillers, both as to quality and cheapness.

Cocoa and chocolate.—This trade continues to increase in importance, both the importation of cocoa and the exportation of cocoa and chocolate again showing an increase over the previous year.

Cigars.—The demand for Dutch-made cigars continues steadily to increase, especially for the cheaper sorts. Here, again, the customs duties imposed of late by other countries have been a great hindrance to trade. The Dutch East Indies have taken larger quantities. The English market has

not yet recovered the blow caused by the passing of the merchandise mark act.

DIAMONDS AND DIAMOND INDUSTRY.

The past year was by no means a satisfactory one either for the trade or for the industry. The South American republics and Russia were, for obvious reasons, nearly out of the market. On the other hand, the United States bought very largely, principally diamonds of the highest class, to which the American purchaser pays more attention than those of any other nation.

The restricted importation into London from the Cape and the diamond syndicate there cause the price of the raw article to be kept disproportionately high as compared with that for the finished diamond. On the other hand, great fluctuations in value can no longer take place, and the trade is generally steadier.

The position of the smaller manufacturers and cutters remains, however, a very sad one. They have to buy at comparatively high rates the raw diamonds which their more powerful competitors do not care to take. It is to be feared that the small manufacturer and the cutter who works on his own account will eventually be crushed out of existence.

The position of the workmen, skilled or unskilled, has also become less favorable, especially as there are many more workers than the restricted supply of raw material can furnish with employment.

The owners of "mills," which are hired to the diamond-cutters, are naturally also very unfavorably affected by this state of things. The rent has fallen to a figure which no longer suffices to cover expenses, and no doubt exists that many of these establishments, called into existence at a period of inflation in the trade, will have to be devoted to other purposes.

STOCK EXCHANGE.

The Amsterdam Stock Exchange formed, as was natural, no exception to the generally depressed and lifeless condition of the European financial exchanges during the past year; not that any such great shocks were experienced here as convulsed other markets, but that confidence was seriously impaired and the inclination to invest much restricted. In this respect the following table of funds emitted on this market during the past year, as compared with 1890, is of interest:

Description.	1890.	1891.
European state loans	$387,648,000	$224,236,000
Other state loans	182,400,000	10,497,600
American railway	35,904,000	2,966,400
Russian railway	499,200	16,147,200
South African stocks	6,652,800	4,800,000
Mining stocks	2,596,800	988,800
Industrial companies in Holland	16,895,600	6,864,000
Plantation (Dutch East Indies)	2,784,000	2,779,200
Municipal loans	2,755,200	3,009,600

The amount of bills discounted and loans on produce, etc., made by the Netherlands bank show a diminution of fully 15 per cent as compared with the figures of the previous year.

Portuguese and Brazilian stocks were those whose depression most unfavorably affected the Amsterdam Stock Exchange.

At the close of the year nearly all stocks held in this market showed a marked diminution in value, the principal sufferers being the holders of Dutch East India plantation shares.

SHIPPING.

Table giving return of all shipping at the port of Amsterdam in the year 1891.

ENTERED.

Nationality.	Sailing.		Steam.		Total.	
	No.	Tons.	No.	Tons.	No.	Tons.
British	33	16,981	827	567,704	860	584,685
Austrian	1	562	.....	.....	1	562
Belgian	.....	.....	1	265	1	265
Danish	17	2,792	8	7,286	25	10,078
French	1	67	7	3,782	8	3,849
German	10	4,882	215	149,440	225	154,262
Greek	.....	.....	2	2,292	2	2,292
Italian	4	3,930	.....	.....	4	3,930
Dutch	84	38,692	444	343,473	528	382,435
Norwegian	76	27,237	71	34,574	147	61,811
Russian	8	3,112	.....	.....	8	3,112
Spanish	.....	.....	26	28,887	26	28,887
Swedish	5	1,746	24	15,482	29	17,228
Total	239	100,211	1,625	1,153,185	1,864	1,253,296

CLEARED.

British	41	18,145	821	554,870	862	573,015
Austrian	1	562	.....	.....	1	562
Belgian	.....	.....	1	265	1	265
Danish	18	3,097	8	7,556	26	10,653
French	1	92	7	3,782	8	3,874
German	15	6,433	195	130,374	210	136,807
Greek	.....	.....	3	3,212	3	3,212
Italian	3	2,121	.....	.....	3	2,121
Dutch	88	43,134	474	373,604	562	416,738
Norwegian	71	24,542	73	35,103	144	60,645
Russian	9	4,353	.....	.....	9	4,353
Spanish	.....	.....	24	26,596	24	26,596
Swedish	6	1,870	23	14,736	29	16,606
Total	253	105,349	1,629	1,150,098	1,882	1,255,447

THE MERWEDE CANAL.

It is hoped that the whole of this important work will be completed this year. Already the communication between Amsterdam and the upper Rhine has been made as far as the River Leck, and as the necessary dredg-

ing for improving the depth of this river will be also carried out in the course of this year, Amsterdam will at length be in possession of a good and free water way to Germany, and will be in a position to compete for a large share in the ever-increasing water traffic to that country.

PRINCIPAL ARTICLES OF IMPORT.

Table showing some of the principal articles of import to the port of Amsterdam during the years 1889–'91.

Articles.	Quantity.		
	1889.	1890.	1891.
Coffee.....tons...	30,284	24,679	29,552
Sugar.....do.....	94,158	62,884	80,100
Tea.....do.....	2,746	2,023	1,922
Tin.....do.....	5,355	4,448	.....
Hides.....number...	268,983	274,175	311,737
Indigo.....tons...	323	233	376
Rice.....do.....	28,438	25,591	29,605
Cotton.....bales...	28,974	30,439	42,723
Tobacco.....tons...	23,063	23,586	29,270
Rye.....quarters...	444,534	265,097	397,696
Wheat.....do.....	191,213	107,211	263,459
Barley.....do.....	42,164	23,344	72,477
Flour.....tons...	24,514	26,517	31,162
Linseed.....quarters...	282,581	334,520	444,988
Petroleum.....tons...	36,989	49,580	58,740

YMUIDEN.

The construction of the new locks is being pushed forward with vigor, and when completed will facilitate the entry of the large vessels from the North Sea considerably, since now, owing to the shortness of the present locks, these vessels can not enter the canal until the tide of the sea is on a level with the canal.

DOCKS AT AMSTERDAM.

A breakwater for the better protection of vessels discharging at the Handelskade has been completed, with excellent result, and this construction is capable of being converted at a future date into a new quay when such shall be found necessary. That this may probably soon be the case is best shown by the following figures, showing the progress made by the trade of the city during the past thirty years. The net tonnage of the vessels entering the port amounted to:

Year.	Number.	Tons.
1861.....	2,073	439,024
1871.....	1,620	527,312
1881.....	1,658	731,823
1891.....	1,723	1,507,525

It was thus nearly quadrupled in this period and more than doubled within the past ten years.

The increase in the size of the vessels is most remarkable.

The entries at Ymuiden, which include the vessels bound to Zaandam and Westzaan, etc., amounted to 1,813,415 tons net.

T. M. SCHLEIER,
Consul.

UNITED STATES CONSULATE,
Amsterdam, July 21, 1892.

AFFAIRS IN SIERRA LEONE.

REPORT BY CONSUL BOWSER.

I have the honor to report the condition of trade as being about the same as when I reported last June.

There has been no increase of American business houses here this year. American vessels have arrived and departed to the same number as formerly. There was an attempt made to introduce some American machinery here last January by a firm in Buffalo, such as sugar mills, rice mills, coffee-hullers, and, in fact, any machinery that would help develop the vast resources lying idle here. English prejudice was, however, so strong against anything of American origin that the agent could not make any opening, and was compelled to go further down the coast. The all-absorbing interest here centers in trade by bartering with the natives, by which a precarious living is eked out, no preparation for to-morrow being necessary in this hot climate and manual labor being considered degrading by those who can manage to employ servants, and servants' wages are low compared to the United States. Servants receive 30 cents per day and find their own food, or 24 cents and you feed them. The former is decidedly the cheapest; $3.60 per month for a man, you feeding him, is called good wages. The women here do not hire out to service; the boys and men do all the house-work.

Under different auspices and conditions this could be made a fine country. American push and inventions would develop the resources of this country to a great extent in a short time, but at present Sierra Leone can only be called a coaling station.

The imperial Government maintains a garrison of soldiers here and is putting up barracks and buildings to better accommodate them. Only one regiment at a time is quartered here. That now here consists of West Indians, with white officers.

The colonial government consists of the governor, colonial secretary, treasurer, collector of customs, and subordinates. There have been five changes in the governor's office in eight months, different governors or administrators each time.

The town is governed by a legislative council composed of the governor and heads of the departments down to treasurer and the military commander.

Nobody pays taxes. The Government does all that is done. The question of a municipal government is now being agitated, and meets with fierce objection.

Agriculture is not carried on to any extent, not half enough, outside of garden vegetables, being raised to support the colony.

Churches and schools are in as prosperous a condition as could be expected; in fact, education is in advance of many other things.

This colony is 104 years old, yet it is only now making a move to have a city government. There are 30,000 inhabitants in Freetown alone and 30,000 more in a radius of 10 miles.

BOLDING BOWSER,
Consul.

UNITED STATES CONSULATE,
Sierra Leone, June 30, 1892.

AMERICAN GRAIN IN SPAIN.

REPORT BY CONSUL TURNER, OF CADIZ.

I have the honor to again call the attention of the Department to the value that a sample collection of American grains placed on exhibit at this consulate would have for developing trade. About a year ago, the Department of Agriculture signified its intention of sending such a collection to Cadiz, but up to date nothing more has been heard of it. The grain crops here are a failure, and I once again urge that a sample of American grains, with their commercial classifications and present export prices, be sent to this consulate to be placed on exhibition at the board of trade rooms of this city.

From the inclosed letter of our agent at Huelva you will see that inquiries have commenced regarding the importation of corn.

R. W. TURNER,
Consul.

UNITED STATES CONSULATE,
Cadiz, September 6, 1892.

CONSULAR AGENT CATLIN TO CONSUL TURNER.

[Inclosure in Consul Turner's report.]

DEAR SIR: I have inquiries from a few friends who wish to import maize from the United States, and I shall be glad if you can furnish me with the addresses of any exporters there, and also give me any particulars with regard to the importation of this product into Spain.

Yours respectfully,

JNO. R. CATLIN.

LAND AREA OF DENMARK.

REPORT BY CONSUL RYDER, OF COPENHAGEN.

Tabular returns have lately been issued from the statistical bureau of this city relating to the extent and employment of the land area of Denmark at the close of the year 1888. The publication of these returns has been considerably delayed, owing to the department having been put to extra laborious work in the correction of a large number of the returns, which in many instances were found to have been based more upon estimates than upon ascertained facts.

The registered land area at the close of 1888 for the entire Kingdom was 6,878,280 barrels of land measure (1 barrel = 1.4 acres); in the islands, 2,340,970 barrels; and in the peninsula of Jutland, 4,537,310 barrels. The estimated water area in 1888 for the Kingdom at large was 75,855 barrels (34,727 in the islands and 41,128 in Jutland).

The aggregate area of Denmark, according to the previous census taken in 1881, having been 6,950,278 barrels of land, an increase of 3,857 barrels is thus found to have taken place in the land area of the Kingdom under the census of 1888, which is due to the recovery of land from the sea in the island districts; no change occurred in the Jutland peninsula.

In the aggregate area of 1888 105,990 barrels of land fall to the share of the towns and 6,848,145 barrels to the rural districts. The employment of this area, according to the tables just issued, was distributed at the close of 1888 in the following manner:

Description.	Barrels.	Description.	Barrels.
Pasture land	2,735,401	Fens	219,285
Arable land	2,457,514	Quicksands	73,694
Heath land	738,701	Garden ground	51,277
Woodland	411,218	Building ground	48,704
Hedges, highways, footpaths, and water area	108,246	Stony and uncultivated ground	42,211

In making a comparison between the respective conditions of the two main divisions of the Kingdom, it is shown that for pasturage and arable land taken together 1,956,452 barrels were employed in the islands, and 3,236,463 barrels in Jutland, and that in the Jutland division the area of pasture land exceeded that of the tillage area by 471,021 barrels, while in the islands the tillage area exceeded that of the pasture land by 193,134 barrels.

Of the heath tracts of land, which in 1888 amounted to 738,701 barrels, 726,530 barrels fall to the share of Jutland, only 12,171 falling to the islands. Of the woods and forest area, amounting to 411,218 barrels, the larger share—225,390 barrels—falls to the islands, with 185,828 barrels to Jutland. Again, with the bog and fen lands the largest proportion

is to be found in Jutland, where they occupy 181,698 barrels, while only 37,587 barrels are contained in the islands.

Looking next at the aggregate of the Kingdom's land area devoted to the culture of the four principal grains during the last three periods of census taking—in 1888, 1881, and 1871—these are seen to have been of the following nature:

Grain.	1888.	1881.	1871.
	Barrels.	*Barrels.*	*Barrels.*
Oats	772,394	728,966	672,248
Barley	540,327	574,565	551,787
Rye	509,255	485,342	449,286
Wheat	88,008	101,337	103,088

From this summary it will be observed that the wheat area has declined at both periods of census-taking, while the rye area has met with an increase. The oats area also received an increase at both periods. The barley area is said to have been subjected to fluctuations at the different periods.

In the culture of the other grains the tables show that 9.97 per cent of the arable land was employed for mixed seeds, as well for ripening as for green fodder; for buckwheat, 1.47 per cent; and for peas and beans, 1.28 per cent.

The aggregate area employed in the culture of the different root products for the Kingdom at large in the year 1871 amounted to only 10,203 barrels; in 1881 it had increased to 34,326 barrels, and by the census of 1888 it amounted to 95,911 barrels, that is to say, the culture of these products in 1888 for the entire Kingdom was ninefold greater than in 1871. Leaving out the potato plant, the employed area for root crops in 1888 was distributed as follows: Mangolds, 34.94 per cent of the area; turnips, 33.41 per cent; sugar beets, 13.01 per cent; carrots, 11.52 per cent; kohl-rabi, 4.08 per cent; chicory, cabbage, and other plants, 3.04 per cent.

An increase has also taken place in the area of garden ground. Under the present census this is credited in the returns with an area of 51,277 barrels, against 45,168 barrels in 1881 and 37,157 barrels in 1871.

The area of heath land from 1881 to 1888 has, on the other hand, been diminished by 3 per cent in the Jutland division of the Kingdom.

Finally, it is to be observed from these tables that in 1888 the extent of the drained lands of the Kingdom was 581,608 barrels in the islands and 273,929 barrels in Jutland, against 242,762 barrels in the islands and 120,766 barrels in the Jutland peninsula in 1871.

HENRY B. RYDER,
Consul.

UNITED STATES CONSULATE,
Copenhagen, June 29, 1892.

ORIGIN OF SPANISH TITLES.

REPORT BY CONSUL BOWEN, OF BARCELONA.

PRINCIPE DE ASTURIAS.

At the instance of Don Juan I a law was passed according to the eldest sons of the Castilian kings the title of "Principes de las Asturias." The first to obtain this title was Don Enrique, son of Don Juan. The ceremony took place on the 18th of April, 1388, and was as follows: The king sat on a magnificent throne, put a purple cape over his son's shoulders, a hat on his head, and a gold wand in his hand, and then kissed him and said: "Principe de Asturias, sentaos" (Prince of Asturia, be seated).

GRANDES DE ESPAÑA.

Don Silo, King of Leon, who began his reign in 774, instituted toward the close of that year the noble order "Ricos Homes," who, with the prelates of his Kingdom, were to confirm royal privileges and were intended to counterbalance the power of the prelates. This order existed in Castile and Leon until 1516, when the Catholic kings gave them the title "Grandes de España," but deprived them of their prerogative to confirm royal privileges. In 1520 Charles V conceded to them the honor of remaining covered in the presence of the kings, dividing them into three classes. Those of the first class could listen and talk to the kings with their heads covered, and were called "cousins" by the kings. Those of the second class could talk, with their heads covered, to the kings, but must uncover when addressed. Those of the third class could remain covered in the presence of the kings, but had to remove their hats when speaking or spoken to. To the second and third classes the kings gave the appellation "parientes" (relations). The same Charles V ordered that the kings be addressed as "majestades" (majesties) and not "altezas" (highnesses), as theretofore.

DUKES, MARQUISES, AND COUNTS.

Duque, derived from the Latin word *dux* (captain of the army), and today the title of most importance, was created after that of *marqués* (marquis) and *conde* (count), the first duke having been the Duke of Benavente, 1793. *Marqués*, which is the title next in importance to that of duke (*duque*) and which anciently signified "defender of the boundaries," was first attached to the name Villena in 1366. *Conde* (count), from the Latin *comes* (a companion, he that accompanies the prince or sovereign), is the most ancient title after the aforesaid "Ricos Homes." The first count was Count de Trastamara, of Castile, who obtained his title in 1328.

Of the population of Spain one-fifteenth is said to be nobles.

HERBERT W. BOWEN,

UNITED STATES CONSULATE, *Consul.*

Barcelona, July 7, 1892.

WHEAT LOSSES IN MANITOBA IN 1891.

REPORT BY CONSUL TAYLOR, OF WINNIPEG.

In my commercial report for 1891 I referred to the great loss of the wheat crop in Manitoba by exposure to stormy weather in badly constructed stooks and stacks, and the delay in thrashing from the disproportion of the quantity produced to the labor available. In further illustration I give an article from a reliable Manitoba journal, the Pilot Mound Sentinel:

Never before in the history of the province has Manitoba suffered such a loss of grain as has been experienced in the case of the crop of 1891. The amount of ground under cultivation was enormous and the yield per acre something unprecedented. The management of such a quantity of produce was wholly beyond the means at the disposal of farmers. Help was costly and difficult to obtain; the inferior and undesirable reaping machines in use were continually breaking in the heavy grain and the labor of stacking was exhausting, owing to the unusual weight of the sheaves, while many farmers had from fifty to a hundred and twenty stacks to build. Before the large harvest was gathered and while many fields were still covered by stooks the winter set in with unusual severity, commencing with a violent storm that batted the stacks full of snow and made the work of thrashing difficult, if not impossible. The intense cold caused the weak and brittle metal of the thrashing machines to give way as if the castings had been made of clay in a brickyard instead of being constructed in a foundry. Thaws, followed by frequent blizzards, made the stacks a sheet of ice, crusted by snow, with the tops only projecting from surrounding drifts. Thrashing had finally to be abandoned after enormous quantities of grain had been rendered useless by the ice that became mixed when the sheaves were passing through the machine, and the work of reducing the stacks, which should have been done early last fall, is going on now on some farms.

The result of all these disasters is that an exceedingly large proportion of the heaviest crop of grain that any country ever produced has been wholly lost. Owing to the destructive wind storms that swept the country in August and to the damage from early frost, thousands of acres of grain were never cut, thousands of acres were cut and never stacked, thousands of stacks that were erected in excellent condition were never thrashed and never will be, having been destroyed by snow and rain. Hundreds of thousands of bushels of grain have been so damaged by ice and damp received either in the stacks or in the ill-constructed granaries of the farmers that the whole has heated, and grain fields have this season been ruined by farmers sowing damaged wheat. In places in the vicinity of Pilot Mound the road has in a manner been graded with grain, which was at one time excellent, but which, becoming heated, was hauled out as useless. During the heavy rains of last week there was as much wheat exposed, having been spread out to dry near the elevators, as would have kept the owners in flour perhaps the remainder of their lives had the grain been properly saved.

The lesson taught by the disasters of last year are that men should not attempt more work than can be accomplished, no matter how great may be their necessities, for in such cases the whole is sometimes lost. Had the farmers of Manitoba reaped, stacked, and thrashed half the grain that grew on their farms last season and burned the remainder without cutting it they would have been better off than they are by attempting to save the whole. In the efforts to gather an enormous harvest from immense fields some men killed themselves, others have been so broken down by excessive labor that they will suffer from their exertions all their lives, and in thousands of cases the whole work has been lost.

JAMES W. TAYLOR,

UNITED STATES CONSULATE, *Consul.*

Winnipeg, July 29, 1892.

CONSULAR REPORTS

ON

COMMERCE, MANUFACTURES, ETC.

No. 146.—NOVEMBER, 1892.

THE WORLD'S 1892 CROPS.

REPORT BY CONSUL-GENERAL GOLDSCHMIDT, OF VIENNA.

I submit herewith a report on the growing crops of Austria-Hungary and of the world's crops, as published by the Austrian and Hungarian ministries of agriculture, and the reports on the crops of the various countries of the world, as published by the committee of the twentieth international grain and seed market, which met at Vienna on August 29 and 30, 1892; the latter have been commented upon by some general remarks.

The importance of the matter to our country and to the world in general need not be dwelt upon. I have taken particular pains in securing the most reliable and trustworthy material from official sources.

AUSTRIA.

The ministry of agriculture has published the following report on the crops of Austria up to August 22, 1892:

In consequence of the highly favorable development of the kernel, the yield of the grain crop in general turns out still better than was assumed in the last report. Galicia especially will this time be favored with a very good yield of the four principal grain crops.

The rye crop, in consequence of the good thrashing and in spite of the imperfect ears which sometimes occur, may now, on the average, be classified as good middling, although in regard to the quantity of straw by itself it might have been estimated at scarcely middling. The rye crops of Silesia, Galicia, and also of Salzburg and Vorarlberg, may be classed as good; however, those of Styria and Carniola as middling, and all the rest of the rye crops may be classed as good middling. The quality of the kernel is much praised. Where any complaints at all are made it is not in consequence of the imperfect development of the seed, but of the inauspicious weather during harvest time, in consequence of which the kernel here and there has sprouted in the field.

The wheat crop in general considerably surpasses the rye crop in regard to the number of sheaves per hectare, and is promising as good a thrashing; hence it may be estimated as good middling to good. Good wheat crops were those of Bohemia, Silesia, Galicia, Lower and Upper Austria, Salzburg, Tyrol, and Vorarlberg; as middling must be considered those of Carniola and Istria; as weak middling that of the Wippach Valley, in Carniola, chiefly in

consequence of the great injury caused by grubs. In the valley of Budweis the yield has been greatly damaged by *Chlorops tæniopus*. The quality of the wheat kernel, taken on an average, is satisfactory; only where the crop was beaten down the quality is less satisfactory. Complaints of rust or rot of the kernel occur but very rarely.

The barley crop may be set down as rather above good middling. As entirely good it may be considered in Bohemia and in the Hanna of Moravia, although in Bohemia there also occur some middling and even weak middling barley crops. The barley crops of Upper Austria and of Tyrol may be set down as nearly good. Next comes the barley crop of Galicia, which can be considered as only good middling. In all the other districts it turned out either good middling or nearly good middling. In regard to the quality of the barley, the reports, in general, are not so favorable as in the case of rye and wheat; but still by far the greater part are favorable. The inferior quality that occurs refers mostly to loss of fine color caused by local unfavorable weather during harvest time and partly to inferior weight chiefly in those numerous cases of great heat which forced ripening.

The oat crop is relatively least satisfactory of the four principal grain crops. As good middling to good may be considered the crops of Galicia, Bukowina, Lower and Upper Austria, Salzburg, and Tyrol, while Bohemia and Moravia yielded only middling crops. As the ripening of a good deal of oats has been too quick, there is much light grain.

The harvesting of pulse is partly going on and partly ended, and may be set down at least as good middling; but in some parts of Bohemia, Moravia, and Bukowina the crop has been ruined by the gamma (moth), and in Carniola by grubs. In consideration of the yield in the other parts of those countries, the crop may be estimated in Bohemia at least as good middling, in Bukowina as middling, and in Carniola only as weak middling.

To maize the heat generally proves very useful, but in some places it has already been injurious. The future will depend on the weather. The perfect ripening of that grain appears already to be certain, even in parts where maize frequently will not ripen. In many parts of Bukowina maize shows but few ears; in Galicia it suffered somewhat from continued rains before the heat set in; and in Carniola it has been greatly injured by grubs and wireworms. But in Styria it is very fine, and in Lower Austria, Tyrol, Vorarlberg, and the Küstenland it promises well.

Of buckwheat, the harvesting of which (first fruit) is going on, the reports from Galicia are good; from the Alpine countries and those of the Karst the second fruit has come up well for the greater part and has commenced blossoming.

The thrashing of rape confirms the estimate of a good crop on the average. In eastern Galicia it is very good, but from western Galicia the reports coming in are for the greater part unfavorable. The sowing of rape, which is going on now, is unusually difficult, in consequence of the great drought.

Early potatoes, although a considerable part of them were subject to rot, still yielded a rather satisfactory crop. Late potatoes, too, promise a similar yield, although in the northern parts the stalks have already faded, partly in consequence of the heat and partly by the appearance of the *Peronospora infestans*. In Lower Austria and Carniola grubs have caused great damage to potatoes.

Beets, especially sugar beets, suffered considerably from heat. In the northern zones, especially in Bohemia, they present frequently, if not mostly, faded leaves and small tubers; in some parts, also, many sprouts. However, they are for the greater part still capable of recovering, and it is anticipated that their quality will make up for the less satisfactory quantity. In Moravia (Hanna) they have been considerably damaged by the gamma (moth) and in Galicia and Carniola by grubs.

In the Alpine countries (inclusive of Lower Austria) the condition of fodder beets is mostly satisfactory. In the Alpine countries the stalks stand tolerably good; but, according to the reports of the countries of the middle zones, they are there only middling.

In the Alpine meadows, where there is but one cut of hay, the crop, taken on the whole, has turned out very good. The aftergrowth of the clover fields and meadows of the Alpine

districts is likewise satisfactory and promises a very good yield. But the aftergrowth in the districts of the northern zone looks very bad; in many places it is even quite burned out by the heat, so as to leave no hope for a crop of aftergrass. Hence many complaints are made in these countries of want of fodder.

From Bohemia and Tyrol there are only good and very good reports concerning flax; but from Moravia complaints are heard of damage done by the heat and by the caterpillar of the gamma (moth).

Hop reports from Bohemia in general, and also from western Galicia and Moravia, state that middling to good middling crops may be expected.

Both very good and very unfavorable reports have come in regarding the expectation of the vintage in Lower Austria, so that perhaps a middling yield may be anticipated. However, the reports from Styria complain greatly of the peronospora and blight. Very good expectations are continuing in Tyrol, but those of Istria appear now to be rather less favorable; still the vintage may be expected to be good middling to good. The shipment of grapes commenced at Bozen on the 5th of August.

With the exception of the German southern Tyrol, the reports of the fruit crop are very unfavorable all over. In regard to plums, for the greatest part only middling or weak middling crops are expected; of the other kinds of fruit the crops appear to be a failure.

From Istria good reports on the condition of olives are coming in.

HUNGARY.

The Hungarian ministry of agriculture publishes the following report on the condition of crops up to September 3, 1892:

The weather during the last two weeks was mostly dry, and the enormous heat continued until almost these last days. Rain occurred only here and there, and the lack of rain was injurious especially to the maize plant, in regard to which a tolerable return was still anticipated two weeks ago. Now there can be expected only a weak yield in general, with the exception of the parts between the Danube and Theiss and the Theiss-Marosch area. Pulse and garden vegetables do not answer expectations either. Potatoes yield a good return only here and there; for the most part the yield will probably be weak. Sugar and fodder beets in general stand bad. Hemp and flax mostly promise a rather satisfactory return. Tobacco is said to have suffered from unfavorable weather, in so far that the leaves are small; but in general it still promises a middling yield. The vine promises only here or there somewhat like a favorable return; but in general it has suffered greatly from dry and hot weather and by phylloxera and peronospora. Of fruits, plums will yield a rich return.

CROPS OF THE WORLD.

According to a publication by the statistical bureau of the Hungarian ministry of agriculture, this year's wheat crop of the world amounts to between 744,000,000 and 755,000,000 hectoliters. That of last year was ascertained to have been (in round figures) 750,000,000 hectoliters; hence there is no difference between the yields of this year and last. The surplus of the yield over the want of wheat is 16,800,000 to 24,300,000 hectoliters. The rye crop may be estimated at 440,000,000 hectoliters; last year it was about 370,000,000 hectoliters.

The committee of the twentieth international grain and seed market, held at Vienna on August 29 and 30, 1892, reported on the crops of the various countries of the world as follows:

The picture presented to this year's international grain and seed market will be quite different, in every respect, from that of last year's. Then there were bad crops throughout

the whole of Europe and a failure of crops in Russia; then Russia closed its frontiers to the export of grain, which it has opened again these latter days; then the United States, with the richest crop they ever harvested, appeared as the suppliers of Europe, while this year it has housed only a middling crop; at that time, finally, there were still the high duties on imports in all the countries of the Continent; this year new trade conventions have paralyzed the effects of the last bad crops of Europe. A glimpse at the following table will show that this year, in spite of middling crops, the prices for breadstuffs show a downward tendency. At Vienna, Berlin, Paris, London, and New York the prices for breadstuffs are quoted to-day (August 27, 1892) and were quoted at the same time in 1891 as follows:

Grain.	Vienna.	Berlin.	Paris.	London.	New York.
Wheat:	*Florins.*	*Marks.*	*Francs.*	*s. d.*	
1891	10.80	248.00	28.10	39 11	$1.08¾
1892	7.72	153.00	.....	29 9	.80⅜
Rye:					
1891	10.48	250.75	22.50	.....	.....
1892	6.70	139.00	14.25	.....	.....
Maize:					
1891	7.00	.....	.....	.....	.72
1892	5.40	.....	.....	.....	.57⅞
Flour:					
1891	19.20	.....	63.00	.....	4.50
1892	15.50 to 16.50	.....	50.75	.....	2.85

These figures show a falling off of prices of from 25 to 50 per cent. This result is owing to both the better crops that have been harvested and the concluding of trade conventions which, by lowering the duties on grain, also effected a beneficial pressure on prices for breadstuffs. An enlivening impulse for the development of international traffic is wanting this time, for the crops show nowhere—Russia perhaps excepted—a considerable deficit; and nowhere is there any compulsory necessity for commerce to cover that deficit as soon as possible. The export from Austria-Hungary can not gain in extent, for the reason that its customers (Switzerland excepted), such as Germany, Alsace-Lorraine, and Italy, harvested good crops, and, besides, are provided with numerous cheap offers from America. Added to this there is still a great difference between the inland and the foreign prices, although there can be but little doubt that at no distant time Austrian producers will accommodate themselves to the prices of the world's markets. To-day they are still keeping aloof, and there is but little prospect that a change will be brought about by the two business days of the international grain and seed market. Producers think they had better wait with their crops, as the heat and drought of the past two weeks are endangering the yield of potatoes, beets, maize, and pulse, and likewise that of the fruit; hence there appears the possibility of a greater home consumption of grain. The prospects for the export of barley are better, for this Monarchy has harvested much and good qualities of barley this year. To be sure, foreign countries have also had a good crop of barley; but, with prices to answer, customers in southern Germany and in England will still come back again to the fine brewing barley of Moravia, Bohemia, and upper Hungary.

The Neuen Freien Presse of August 29, 1892, comments as follows:

Nature has spent her gifts liberally and pretty equally to the countries of two hemispheres, with the exception of this Monarchy, which has rather been shortened, and of the far-extended Russian Empire, which, for the greater part, has harvested an insufficient crop.

While the crop of 1891 filled the world only with complaints of the failure of crops in Europe, and America only was blessed with such an enormously rich crop as it had never harvested before that time, the crops of this year form a magnificent picture of good and handsome yields. The agriculturists are satisfied, and consumption looks hopefully for a cheaper

supply of its wants, prices for breadstuffs having been reduced during the year from 30 to 50 per cent. Sad to say that, although the enormous fall of prices for breadstuffs has taken place for more than half a year, a cheapening of bread is nowhere to be seen or felt in this Monarchy.

The lowering tendency of prices seems to have come to a standstill for the present, and much will depend on the turning out of the crops of potatoes, maize, sugar beets, and other fruits of the field. The reports which, up to yesterday, reached the board of international seed and grain market nearly without any exception stated the condition of the potatoes to be satisfactory and anticipate a rarely good yield. However, in Austria-Hungary, where for weeks the tropical heat has dried out and hardened the ground, both potatoes and sugar beets are retarded in their development; still, a rain setting in soon might improve much.

Germany is in the fortunate position of looking for a crop of almost 110 per cent. The shortage to be covered from abroad will scarcely require one-half of last year's import. France has secured about 110,000,000 hectoliters of wheat, and to cover its annual supply will want an import of about 8,000,000 or 10,000,000 hectoliters. Italy will require scarcely 5,000,000 metric centners, and England needs 19,000,000 quarters of wheat, of which more than 4,000,000 quarters are already covered by old stocks stored in the ports. But otherwise the old stocks have all been disposed of, and consumption at once has taken hold of the products of the new crop. Without doubt the United States and India will this year, too, supply the shortage of the European grain crop; for, although Russia, with its crop of scarcely 80 per cent, will be in a position to take up the grain export again, still the fatal year 1891 has entirely interrupted many connections. A number of respectable firms who exported grain on a large scale have disappeared, and another part of the grain trade has been thus weakened by losses caused by the prohibition of the grain export, so that it will be scarcely able to interfere in the traffic of the world. Finally, the question of duties on import will also have to be considered; they are to-day still existing with a higher tariff rate for Russian goods, while the three convention states (Germany, Austria-Hungary, and Italy), between each other and also for the most-favored nations, have introduced lower customs duties since March. The commercial-political approach of Russia to Germany, which of late has been much noticed and spoken of, could not purport but next to remove the unfavorable treatment of the Russian grain on its being imported into central Europe, an attempt which hitherto has failed. Our Monarchy fills but a modest place in supplying the European shortage. Compared to the yield of 520,000,000 bushels of America our surplus of 2,500,000 metric centners of wheat of which foreign customers could dispose, is of no significance whatever; besides, the prices allowed in our home markets are such as to make an import abroad appear not to be remunerative. Only barley may calculate on its usual customers; but even there the prices of to-day form an obstacle to a more lively traffic, and it remains to be seen whether foreign countries will yield in the question of the price.

The crops of Europe present the following average figures, 100 being taken as the figure for a middling crop: Wheat, 103 per cent; rye, 102 per cent. The crops of 1891 were: Wheat, 79 per cent; rye, 63 per cent. These figures by themselves will explain the stagnation of business which has taken place since harvesting and the downward tendency of prices, in spite of the old stocks having been exhausted and in spite of the less rich crop in America, while last year consumption could still calculate with considerable stock. The lessened interest of the respective parties in this year's Vienna grain market may also be ascribed to the results of this year's crops. Besides, the appearance of the cholera in Hamburg and the quarantine measures introduced by the Governments of Austria and Hungary have lessened the number of visitors to this year's international grain market; but still the number of 5,230 visitors this year, against 6,400 last year, is a surprisingly large figure. To-day, on the first day of the international seed market, no commencement of business transactions has been made; for wheat and rye customers are wanting, and for barley buyers are awaiting cheaper prices. The report of the board of the international grain market estimated the surplus for export of last year's crops to be 3,500,000 to 4,000,000 metric centners of wheat and flour

and 3,000,000 to 3,500,000 metric centners of barley and malt; this year it is estimated at 2,000,000 to 2,500,000 metric centners of wheat and flour and 2,500,000 to 3,000,000 metric centners of barley and malt. According to official statistics, the export of grain, flour, and malt amounted from September 1, 1891, to June 30, 1892, to the following:

Kinds.	1891.				First half of 1892.	Total.
	September.	October.	November.	December.		
	Met. cent.	*Met. cent.*	*Met. cent.*	*Met. cent.*	*Met. cent.*	*Met. cent.*
Wheat	140,000	60,000	41,000	41,000	286,000	568,000
Rye	60,000	34,000	27,000	13,000	203,000	338,000
Barley	527,000	459,000	574,000	433,000	1,285,000	3,279,000
Oats	27,000	34,000	109,000	72,000	480,000	723,000
Maize	23,000	29,000	265,000	426,000	826,000	1,570,000
Malt	103,000	100,000	134,000	86,000	638,000	1,062,000
Flour	64,000	66,000	43,000	30,000	226,000	429,000
Total	944,000	782,000	1,193,000	1,101,000	3,944,000	7,969,000

These figures show that the estimated export of barley for last year was almost fully reached, but that the export of wheat and flour has not absorbed the whole of the estimated surplus. This Monarchy last year had a shortage of about 8,000,000 metric centners of rye, so that an export of rye was not to be supposed. Still, as is seen by the above table, there were 338,000 metric centners of rye exported.* But the shortage of rye was covered by wheat; hence the exports of wheat and flour fell considerably short of the amount estimated. It is also seen by the figures of the above table that one-half of the total export in connection with the new crop takes place during the months of September to December. This year's crop has been belated, so from that reason alone grain transactions could not develop as yet. Besides, another obstacle to the development of the grain export is formed by the difference of prices between the markets of the inland and those of the world. It is to be hoped that this difference will be leveled, and that then transactions will assume their normal phase.

The detailed reports on the crops of 1892 by the twentieth international grain and seed market were as follows:

AUSTRIA-HUNGARY.

The grain crop of the present year has been good in Austria and middling in Hungary.

WHEAT.

In Austria there were 1,111,948 hectares cultivated with wheat, yielding 17,000,000 metric centners. This yield surpasses a full middling crop, which is rarely reached in Austria. A middling crop (not to be exchanged with an average crop), which we calculate at 14 metric centners per hectare, is thus surpassed by 1,250,000 metric centners. That gratifying result is owing to the rich crops of Bohemia, Moravia, and Galicia, where—especially in Bohemia—there were some results attained such as have not occurred for the last twenty years, and also by the good middling crops of the other crown lands (with the exception of Carniola, Istria, and Dalmatia). Besides, the product is of a quality which, in regard to weight, color, and otherwise, leaves little to be wished for in most of the crown lands.

In Hungary and Transylvania there were cultivated with wheat 3,013,318 hectares, which, according to the estimate of the districts by our experts, have yielded somewhat above 37,000,000 metric centners; a middling crop, being calculated on an average for Hungary and Transylvania at 12 metric centners per hectare, is thus still surpassed by a little. This not unsatisfactory result of rather more than a full middling crop is principally to be ascribed to

* The total import of rye during the above period was 42,615 metric centners.

the good wheat crops of Transylvania and upper Hungary, making up for the shortages of lower Hungary and the area between Buda-Pesth and Presburg. The total yield would have been better if in the parts last mentioned the kernel had not been frequently pressed and its quality otherwise damaged by blight, etc. Good, heavy wheat of fine red and mixed color frequently occurs also in Hungary and in Transylvania; but this time it does not form the by far preponderating part, as is usual with middling crops in regard to quantity.

In Croatia, Slavonia, and the Military Frontier the acreage cultivated with wheat is stated to be 121,800 hectares, yielding 1,250,000 metric centners, or 11 metric centners per hectare. This is not quite a middling crop, and, besides, it greatly varies in quality; especially in Slavonia and Syrmia the greater part of wheat is of a pale color.

RYE.

In Austria there were 1,941,377 hectares cultivated with rye, yielding a product of about 26,000,000 metric centners; if a full middling crop be taken at 14 metric centners per hectare, this would make a shortage of 1,000,000 metric centners as compared to a full crop. This relatively satisfactory result, too, is chiefly owing to the good crops of Bohemia, Moravia, and Galicia. The quality, taken on the whole, is satisfactory; but even in the above-named crown lands, which have been favored in regard to quality, a good deal of rye is light in weight and has suffered by rain.

In Hungary and Transylvania there were 1,185,396 hectares stated to have been cultivated with rye, yielding a produce of about 13,750,000 metric centners. Taking a middling crop at 12 metric centners per hectare, this would make this year's yield not very far from a middling crop, to attain which—as with wheat—the good crops of Transylvania and upper Hungary had to make up for the shortages of many comitates. The qualities are varying. There are a great many full, sound, thin-shelled, light-colored kernels; but also a good many that are greatly pressed and partly rained in, and hence falling short in color and weight.

In Croatia, Slavonia, and the Military Frontier 103,089 hectares are said to have been cultivated with rye, and the yield is stated to be about 1,000,000 metric centners, making this year's crop below middling. The quality of rye in regard to color is satisfactory, but not satisfactory in regard to the effective weight and purity.

In Austria there were 1,124,079 hectares cultivated with rye, yielding more than 17,000,000 metric centners, which, if, as with wheat and rye, a full middling crop is taken at 14 metric centners per hectare, will make a surplus of 1,500,000 metric centners as compared to a full middling crop. Bohemia, Moravia, and Lower Austria have harvested a crop above middling; East and West Galicia, Bukowina, Upper Austria, and Styria housed a middling crop; and the other crown lands were below middling. But of more importance than is the surplus quantity is the quality of barley; and although in several parts the work of harvesting was effected during rainy weather, by which a part of the barley has suffered in quality, yet by far the greater part of the Austrian barley is excellent in quality. Not only in the crown lands mentioned as favored in regard to quantity, but throughout Austria in general the bulk of the barley crop, although not often large grained, is still, upon the whole, sound and dry, white or straw colored, mild, and free from foreign mixtures.

BARLEY.

In Hungary and Transylvania 1,042,495 hectares were cultivated with barley, and, according to the estimate of the experts of the exchange, this year's crop will amount to 13,000,000 metric centners, which, taking a full middling crop at 12 metric centners per hectare, would make a surplus of nearly 1,000,000 metric centners as compared to a full middling crop. In regard to quality, prime and select qualities are rarer than usual; but average qualities are frequent. The best barley of Hungary during the present year may probably be met with near Kaschau, while in Slovakei, which generally leads in respect to quality, and in the parts along the Südbahn (Southern Railroad), which, as a rule, yield

excellent qualities, there has been harvested no small quantity of thin and flat barley. But the color, with few exceptions, is everywhere white or yellowish, and, though the bulk of this year's crop of brewing barley in Hungary and Transylvania leaves much to be wished for in regard to the mildness of the kernel, still the produce nearly everywhere proves perfectly sound.

In Croatia, Slavonia, and the Military Frontier the cultivation of barley has been limited. On 42,341 hectares there were cropped about 500,000 metric centners, which does not come up to a middling crop. The produce is mostly free from mixtures, but the body of the barley is hard and pressed.

OATS.

In Austria there were cultivated with oats 1,893,414 hectares, yielding about 26,000,000 metric centners, which is rather less than a full middling crop; but it should be observed that the average yield is pretty equally distributed over all the crown lands. The quality is satisfactory in every respect; the seed is well developed, and, with the exception of Galicia and Bukowina, where oats appear to have been frequently rained in, they are of white color.

In Hungary and Transylvania 1,008,932 hectares were cultivated with oats, yielding, according to the estimate of the experts of the exchange, about 13,000,000 metric centners, which would rather surpass a middling crop if, as last year, a middling crop be taken at 12 to 13 metric centners for Hungary and Transylvania. The shortages in parts of the Bács, in the comitates of Baranya and Pest-Pilis, and in some other districts are more than compensated by the higher yield of Transylvania, upper Hungary, the comitat of Raab, and by those of other counties. In quality it differs greatly, and, though the color is satisfactory in most of the cases, yet the seed, especially in those parts with a shortage in regard to quantity, is chiefly thin, which makes the effective weight inferior.

In Croatia, Slavonia, and the Military Frontier there were 111,550 hectares cultivated with oats. The yield, although varying greatly in Slavonia and Syrmia, is figured in total at 1,500,000 metric centners, which, in regard to quantity, is the same as the results in Hungary and Transylvania; this is likewise the case in regard to quality.

MAIZE.

Expectations for maize in both monarchies were favorable until of late, when the enormous heat of August considerably impaired the good prospects. The same, although to a less degree, is the case with potatoes; while the yield of pulse, which is below middling, has not been very promising in Hungary for some time.

According to our estimate of this year's total crop of both realms, it will yield the following amounts: Wheat, 55,500,000 metric centners; rye, 41,000,000 metric centners; barley, 30,750,000 metric centners; oats, 40,500,000 metric centners.

Regarding the quantity available for export in this Monarchy, we must repeat that it can be stated only on the supposition of a normal home consumption. Last year, for instance, the Austro-Hungarian Monarchy had a shortage of about 8,000,000 metric centners of rye; consequently, in order to cover that shortage, we should have had to import large quantities of rye. Nevertheless, such was not only not the case, but an export of that article took place, as the state of prices induced domestic consumers to use wheat, which was but little dearer, or supply their want by maize, which was much cheaper. This shifting of the conditions of the consumption at home would naturally have its effect on the several articles exported from the Monarchy, and this was actually the case. Provided there be normal condition of the home consumption, and taking into consideration the circumstance that, while last year the old stocks of wheat were very large, they are only very limited this year, we think we may estimate the following quantities to be available for export from Austria-Hungary: Wheat and flour, 2,000,000 to 2,500,000 metric centners; barley and malt, 2,500,000 to 3,000,000 metric centners. What we shall be able to export of rye and oats will hardly be worth mentioning.

GERMANY.

KINGDOM OF PRUSSIA.

[From the general report.—August 24, 1892.]

Large stocks of old grain are no more in store. If, in spite of the good crop of winter grain, we shall be obliged to import from foreign parts, there are little prospects for it now, as this year's new crops are hurried to market from everywhere quicker than is usually the case. Prices have thereby become depressed, and are so low as not to allow import now from abroad.

Everything being considered, we may estimate the total crop of Prussia as follows:

Description.	1892.	1891.
	Per cent.	*Per cent.*
Rye	107	70
Wheat:		
Winter	103	80
Summer	86	93
Barley	90	97
Oats	74	99

EAST PRUSSIA.

[From the special report.—August 18, 1892.]

The crops of East Prussia have been belated about ten to fourteen days by the abnormal cold weather of last summer. Provided the crops still in the field will be successfully housed, East Prussia will harvest a rarely rich crop, especially of winter seed. Spring seeds have not developed fully, in consequence of the cold and dry spring. It may be assumed that East Prussia will be able to export of wheat and rye at least one-third more than it did last year. The potato crop promises to be larger than it has been for the last ten years.

Taking 100 units as a middling crop, this year's crop is estimated here as follows:

Description.	Per cent.	Description.	Per cent.
Wheat:		Peas	105
Winter	108	Beans	88
Summer	85	Potatoes	120
Winter rye	125	Hay:	
Barley	100	Clover	85
Oats	84	Winter	84

WEST PRUSSIA.

[From the special report.—August 16, 1892.]

This year's crop, up to the present, has yielded very good results. This is especially the case with winter wheat and winter rye, the yield of which surpasses a middling crop; large masses of the latter in good dry quality have come to market already in the first days of August. Spring crops, from the very beginning of their development, had been suffering from dry and cold east and north winds. As warm weather and sufficient rain did not set in before the end of May, no favorable result of the spring crops can be expected.

Barley and oats remained short in straw, and the yield of seeds will not reach a middling crop, nor will peas, beans, vetches, buckwheat, and lupine. Rape will yield a middling crop; but potatoes, if the weather remains favorable, will considerably surpass the usual average yield.

As far as can be judged to-day, the crops of West Prussia, 100 taken as a middling crop, may be estimated as follows:

Description.	Per cent.	Description.	Per cent.
Wheat:		Beans	83
Winter	103	Vetches	86
Summer	97	Buckwheat	83
Winter rye	105	Lupine	82
Barley	95	Rape	101
Oats	83	Potatoes	105
Peas	92		

MARK BRANDENBURG.

[From the special report.—August 17, 1892.]

If a middling crop be taken at 100, this year's crop is estimated as follows:

Description.	Per cent.	Description.	Per cent.
Wheat	105	Barley	100
Rye	108	Potatoes	98
Oats	80	Straw	100

POMERANIA.

[From the special report.—August 17, 1892.]

This year's crop, in comparison to last year's, must be classed as very favorable in regard to winter grain, while spring grain seems to be less satisfactory. Exceptionally fine weather promoted the work of harvesting to an unusual degree, in consequence of which the seeds of the breadstuffs are of extraordinarily fine quality. About barley the reports vary greatly. About oats and peas there are general complaints. Oilseed yielded nearly a middling crop. Of potatoes nothing can be said yet, as the opinions of farmers vary greatly. A middling crop being taken at 100, this year's yield may be estimated as follows:

Description.	1892.	1891.
	Per cent.	*Per cent.*
Wheat	104	97
Rye	105	76
Barley	97	101
Oats	85	101
Peas	87	104
Rape	92	83
Potatoes	100	96

PRUSSIAN SILESIA.

[From the special report.—August 20, 1892.]

Of rye, not only in regard to quantity, but also in respect to quality, Silesia has a finer product than it has had for many years; besides, there is no lack of long, stout straw.

Wheat is mostly still more satisfactory than rye. The steam-thrashing machine is seen in full activity in the field, emptying the perfectly dry sheaves of their rich contents of kernels.

Rape is quite excellent, both in quantity and quality.

Spring grain had to suffer from dryness in the beginning and did not develop fully until the end of May. Harvesting, which was as favorable as that of rape, wheat, and rye, was but rarely interfered with by wet, and the barley that came into market about the beginning

of August showed quite an excellent, full, and light-colored kernel. Although it is not likely that the total result of our barley crop will be so favorable in regard to quality, still we have good reason to be perfectly satisfied with this year's barley crop as compared to the crops of later years.

Oats are, relatively speaking, the least satisfactory of the grain crops. The dryness after sowing time has injured oats more intensely than it has barley. In all cases we shall be obliged to import oats from abroad, as we have done for a large number of years, since the production of oats in Germany does not suffice to cover the demand.

Fodder fields at the present are in a very sad condition. As advantageous as the dryness of the last weeks was to the harvesting of grain, it proved injurious to lucern, clover, esparsette, saradella, and to the aftermath. Maize and meslin relatively better resisted heat and want of rain.

Potatoes, until very lately, held out the best of hopes, and the plant is still in a very good condition to-day, without any sign of disease. Still, the want of rain is forming an obstacle to the development of the tuber, and a good warm rain would be very welcome.

Orchards blossomed very finely and promised a rich yield, but, without any visible reason, only a very modest part of the promises proved true. Cherries and plums were satisfactory; but of apples there will be only few, and pears are a failure.

Of last year's grain crops there are no stocks of any significance whatever on hand. The not inconsiderable quantities of rye, and especially of wheat, which were shipped here from Hamburg and Berlin were all placed at the steam and water mills of the province; only there small lots of grain may be in store to be worked into flour. However, of last year's grain in the warehouses of merchants, there can be absolutely none to speak of.

In comparison to the average crop of the last ten years this year's crop in Silesia is estimated as follows:

Description.	Per cent.	Description.	Per cent.
Rape	90	Barley	100
Wheat	102	Oats	85
Rye	100		

In the Kingdom of Prussia a middling crop per hectare is estimated as follows: Winter rape, 1,148 kilograms; wheat, 1,575 kilograms; rye, 1,316 kilograms; barley, 1,442 kilograms; oats, 1,394 kilograms. The figures for Silesia will not vary essentially from these average figures.

PROVINCE OF SAXONY.

[From the special report.—August 20, 1892.]

To make a reliable report on this year's crop of Saxony is very difficult, as in no year before were the conditions of the fields so unequal as they are this year. A good, thorough rain has not occurred throughout the whole summer, with the exception of a thundershower here and there.

Rye may be generally estimated at a middling crop. It will surpass a middling crop in the Altmark in the district of Magdeburg in general. In most of the government districts of Erfurt and in the districts of Merseburg, Weissenfels, Querfurth, Mansfeld Sea, and of Saal it will fall short of a middling crop by from 10 to 12 per cent; but the whole east of the Merseburg district will be from 20 to 25 per cent below a middling crop.

In regard to local conditions, wheat is similar to rye; otherwise it is still more unfavorable. Partly, especially where much Chile saltpeter was used, the yield is quite good; but in other places it is small, and for the rest a good deal of English wheat has been frozen out.

Barley has remained small; in some places it did not ear at all. But the districts of the Altmark, those about Halberstadt, and the Eichsfeld calculate on a tolerable middling crop, while the districts east of the Saale will have a great shortage.

Oats are still worse and prove nearly a failure. In the east of the province the crop is estimated at 55 per cent, and in the district of Schweinitz even at only 35 per cent, of a middling crop.

Peas are promising well, though the straw has remained short; still, a good yield of peas may be expected.

Potatoes will not turn out particularly good this year.

The yield of this year's crop may be estimated at the following figures: Wheat, 94; rye, 100; barley 92; oats, 82; potatoes, 92.

SCHLESWIG-HOLSTEIN.

[From the special report.—August 17, 1892.]

Hay and clover have yielded a rich crop; the quality has suffered in part by rain, but the result in general is good. The estimated crop is: Clover hay, 108 per cent; meadow hay, 102 per cent.

Rape, in regard to quantity and quality, has done well and better than for many years. The estimate is 99 per cent.

Rye has developed well in seed and straw, and has attained large ears, but the quality suffered afterwards from rain. The estimate is 100 per cent, against 97 per cent for last year.

Wheat blossomed late, so that the seed will perhaps be unequal. The straw will remain short. The estimate is 104 per cent, against 99 per cent in 1891. Oats, though somewhat thin, stand well everywhere. The yield of seeds will probably be below middling; the straw has remained short. The estimate is 96 per cent, against 73 per cent in 1891.

Barley seems to yield the best result of all grain crops. The estimate is 108 per cent, against 110 per cent in 1891.

Beans have suffered here and there from caterpillars, wind, and rain. The estimate of the average result is 101.3 per cent.

Peas, for the greater part, are also satisfactory. The estimate is 100 per cent, against 74 per cent in 1891.

Buckwheat did not do particularly well. The estimate is 92 per cent.

Lupines are estimated at 98 per cent, vetches at 105 per cent, potatoes at 105 per cent, against 65 per cent in 1891.

An average crop in Schleswig-Holstein is figured as follows:

Description.	Quantity.	Description.	Quantity.
	Met. cent.		*Met. cent.*
Wheat	935,935	Peas	152,142
Rye	2,361,873	Rape	147,643
Barley	922,250	Potatoes	3,015,876
Oats	3,731,407		

HANOVER.

[From the special report.—August 20, 1892.]

A middling crop being taken at 100, this year's crop will prove as follows:

Description.	Per cent.	Description.	Per cent.
Wheat	110	Oats	100
Rye	125	Beans	100
Barley	115	Peas	105

Our old stock of wheat, like that of rye, is practically exhausted; but it has not become necessary, especially in respect to rye, to create new connections.

As matters are to-day, an import of grain can not be thought of for the present, with the exception, perhaps, of maize and fodder barley, which are not cultivated here, but regularly imported from abroad.

Our export this year will be limited to wheat only, which, chiefly during the fall months, will take its way to the Rhine, to Westphalia, and to Alsace.

WESTPHALIA AND LIPPE.

[August 19, 1892.]

Of wheat the average yield of this year's crop is estimated at 102 per cent (86 per cent in 1891); straw, 95 per cent.

The quality of rye is without blemish. The yield of seed is 118 per cent (88 per cent in 1891); straw, 90 per cent.

Of oats the yield is estimated at about 70 to 80 per cent (100 per cent in 1890); the straw is estimated at 80 per cent. The quality of barley is good; the yield of seed is estimated at 90 and 95 per cent for spring and winter barley, respectively (it was 85 and 75 per cent, respectively, in 1891); straw, 90 per cent.

Beans and peas are weakly developed; the yield is estimated at 100 per cent. The young buckwheat plant suffered several times from frost; the yield is estimated in some places at 50 to 55 per cent; the estimated average yield is about 70 per cent, against 100 per cent in 1891.

Of potatoes the estimated average yield is 110 per cent, as compared with 95 per cent in 1891.

The yield of rape and colza is 95 per cent, against 75 per cent in 1891. The quality is good.

Of hay the yield of the first cut was scarcely 75 per cent, as compared with 90 per cent in 1891. The second growth was destroyed by the heat of the last weeks. Meadows and pastures present a sad appearance. Fodder will surely be wanting.

HESSE-NASSAU.

[From the special report.—August 17, 1892.]

Wheat, rye, and also barley, have for the greater part been secured. The cutting of oats has just begun. The weather is splendid. The quality of all the breadstuffs has not been so fine for a long time. Only oats will experience a not inconsiderable shortage in regard to quantity. The crop of early potatoes may be classed as excellent; late potatoes will probably yield quite a good crop. A middling crop being taken at 100, the following will give the estimate for this year's crop:

Description.	Per cent.	Description.	Per cent.
Wheat	110	Oats	75
Rye	125	Potatoes	110
Barley	100		

RHENISH PROVINCES.

[From the special report.—August 20, 1892.]

The reaping of rye, wheat, and oats, with few exceptions, may be considered as ended. The quality is excellent. The kernel is well developed, very dry, and of fine color. The crops may be figured as follows: Wheat, 100 per cent; rye, 110 per cent; oats, 90 per cent. Potatoes promise a rich yield. All our old stocks have been nearly exhausted, and the new crop has at once been put to use.

KINGDOM OF SAXONY.

[August 20, 1892.]

Sooner than in other years the reaping of winter grain has begun; the harvesting was promoted by favorable weather, and the result answered the favorable development of the plants. Quality and quantity are equally good in regard to the yield of the seed, and only the yield of straw leaves something to be wished for in a few places. On the other hand, the constant excellent harvesting weather, which increased to almost a tropical heat, injuriously affected spring grain, potatoes, and fodder grasses. Spring wheat and barley suffered less from want of rain than oats did. The good prospects for potatoes have been considerably lessened and can only improve if rain sets in. Aftermath will prove but a scanty yield.

The Kingdom of Saxony, in consequence of its exceedingly crowded population, belongs to those countries which, even with a most favorable crop, can not supply its own demands of breadstuffs, but has to import them from other parts. It is natural that with a rich crop like this year's the import will be less than last year's. But there are no reliable sources from which to state figures; such figures would be quite arbitrary. Sometimes Saxony imports from the neighboring Prussian and Bavarian provinces; at other times it takes part of the foreign import into Germany, but to what amount can not be ascertained.

A good middling crop being taken at 100, this year's crop may be estimated as follows:

Description.	Per cent.	Description.	Per cent.
Winter wheat	114	Summer rye	107
Winter rye	110	Barley	105
Rape	112	Oats	93
Spring wheat	107		

UPPER AND LOWER BAVARIA.

[August 22, 1892.]

Part of the crop suffered in quality by rain, while the grain cut later was secured during hot and dry temperature.

Wheat and rye are estimated at two-thirds prime and the other third inferior.

Barley varies in quality, but all of it is good for brewing purposes. Besides yellow kinds, there are many of light yellow and whitish color.

Oats are fine and white, but, in regard to weight, probably will not reach expectations.

Rape, of which little has been cultivated, will yield a middling crop.

Potatoes have suffered from heat and dryness during the last fortnight and will probably be of inferior yield.

A middling crop being taken at 100, this year's crop may be estimated as follows:

Description.	Per cent.	Description.	Per cent.
Wheat	125	Oats	85
Rye	115	Rape	100
Barley	90		

BAVARIAN AND HESSIAN PALATINATE.

[August 18, 1892.]

The crops are of the following qualities: Wheat, satisfactory to very good; rye, unusually favorable; barley, satisfactory.

Oats have not come into market yet. Some good qualities are to be seen, but from many districts it is heard that the quality leaves much to be wished for.

A middling crop being taken at 100 units, this year's crop may be estimated as follows:

Description.	Per cent.	Description.	Per cent.
Wheat:		Rye	105
Winter	120	Barley	102
Summer	100	Oats	80

Potatoes are not very promising. Clover yielded no good result. With this year's favorable crop, our import demand for wheat and rye will be very small, although no large stocks were on hand when the new crops came in.

WURTEMBERG.

[August 16, 1892.]

A middling crop being taken at the figure of 100, this year's crop of the four districts of the country will be as follows:

Description.	District.				Average.	
	Neckar.	Danube.	Schwarzwald.	Jagst.	1891.	1892.
Spelt	102.19	107.6	100.07	106.39	90.45	104.06
Wheat:						
Winter	96.08	100.9	98.67	103.75	84	99.85
Spring	98.48	100.5	90.67	104.28	98.18	98.48
Rye	98.4	103.3	93.75	103.06	84.62	99.63
Barley	96.23	99.7	94.67	100.28	101.4	97.72
Oats	89.04	97	82.67	91.39	106.47	90.09
Peas	95.33	99.07	89.55	103.18	91.36	96.78
Beans	90.7	102.15	86.54	100.08	94.77	94.87

These figures show this year's crop to be better in quantity than last year's; and the quality, too, is very good.

Spelt, the great grain of the country, has here and there suffered somewhat from blight, but is very perfect in ears and kernels.

Winter wheat is standing excellent. Summer wheat and barley are short in straw, but the seeds are very good. The greater part of barley will probably be used for brewing.

Rape is satisfactory, both in quantity and quality.

Oats are thinly scattered, the straw is short, and the yield is less than last year's.

Clover and hay are unsatisfactory. The same will probably be the case with the aftermath.

Early potatoes were satisfactory. Late potatoes are sound and stand fine. The yield will probably be rich.

Sugar beets, chicory, and vegetables of all kinds stand very fine.

Hops in general are of sound appearance and free from vermin. The cool nights and hot days, however, are injurious. The yield will probably reach scarcely half a crop.

Cherries yielded richly; apples about half a crop. Of pears and drupe there will be little; of nuts there will be many.

The vine stands excellent throughout the whole country. Grapes are free from any disease and are developing finely; still, there is scarcely half a vintage to be expected, so much the more as the enormous heat of last week has greatly injured the grapes.

GRAND DUCHY OF BADEN.

[August 16, 1892.]

The cutting and securing of all the grain was effected during good, dry weather, so that the crop is very satisfactory both in quantity and quality.

Wheat and spelt have a full, sound, floury kernel. The same is the case with rye. Barley varies, but on the whole it must be considered satisfactory.

Oats, which are just being cut, suffered somewhat in quantity from dry weather; the quality is good.

The estimate of the crop, in figures, is as follows: Wheat, 100 per cent; rye, 100 per cent; barley, 95 per cent; oats, 90 per cent. Potatoes promise a rich yield.

In consequence of this year's favorable crop and of the rather large stock of foreign wheat, the demand for import will be essentially less than it was last year.

MECKLENBURG.

A very good crop in general could be anticipated, and expectations have not been disappointing.

Rye was greatly retarded. Sufficient sunshine was wanting for a vigorous development of the kernel. The yield is very large, and thrashing seems to be of abundant result. The quality in general seems to be good, too, although the weight has been impaired by wet weather. The estimate is 100 per cent; in 1890, 80 per cent.

Wheat holds out rich promises. The ears are full and heavy; but, in consequence of rain and wind, machine thrashing will scarcely be possible. The estimate is 100 per cent, against 85 per cent last year.

Oats did not develop so well as had been expected. Its condition varies greatly. By the side of good crops there are places that suffered from frost. Ripening, too, is very unequal; in some places it has been cut already, in others it is still quite green. The estimate is 90 per cent, against 90 per cent last year.

Barley has developed very vigorously and has been partly cut, justifying the best hopes. The estimate is 102 per cent, against 95 per cent last year.

Peas and beans are not very promising. The estimate is as follows: Peas, 83 per cent, against 65 per cent last year; beans, 86 per cent, against 95 per cent last year.

Meslin is much cultivated here and promises a good crop. The estimate is 93 per cent, against 80 per cent last year.

Potatoes stand particularly good and promise rich yields, especially the early potatoes. The estimate is 105 per cent, against 75 per cent last year.

The estimate for beets is 97 per cent, against 90 per cent in 1891.

Clover and hay in general have been well housed, and the second cut, too, promises to be favorable.

Oilseeds have yielded a rich crop. The estimate is: Colza, 96 per cent, against 75 per cent last year; rape, 98 per cent, against 50 per cent last year.

Of old stock there is little on hand, scarcely sufficient to cover the demand until harvesting will be quite done.

DENMARK.

The condition of crops is entirely satisfactory. Of barley and oats a richer yield is expected than has been harvested for many years. The estimate is 108 per cent. Rye and wheat prospects are good, but harvesting will be belated, the estimate being 103 per cent. Hay is abundant and has been secured in good condition. Beets, too, promise a rich yield.

An average crop for Denmark is figured as follows; Wheat, 1,760,000 hectoliters; rye, 5,900,000 hectoliters.

SWEDEN AND NORWAY.

[August 17, 1892.]

Hay is very good, being estimated at 100 per cent. If the weather continues fine, wheat, which is cultivated only in Sweden, holds out very good promises, the estimate being 105 per cent. Of rye a full middling crop is expected, the estimate being 100 per cent. Spring grain, especially oats, is praised everywhere, being estimated at 100 per cent. Barley (estimated at 100 per cent), peas, and vetches are very satisfactory, promising rich yields, but they are belated and want warmer weather for ripening.

From the provinces north of Stockholm—Upland, Gestvikland, and Norrland—night frosts were reported in the beginning of August, doing great damage to potatoes and spring seeds.

The stocks have been nearly exhausted. Oats, too, of which only little was exported, and mostly to Denmark, is running out, so that the stock on hand will not suffice to supply the demand until the harvesting of the new crop will be finished.

SWITZERLAND.

[August 17, 1892.]

The crops throughout Switzerland held out good promises, which have now become pretty nearly a fact. Rye has been nearly harvested. Wheat has been harvested only in the lower parts. The other grains are still in the field.

A middling crop being taken at 100, this year's crop is estimated as follows:

	Per cent.
Rye	115 to 120
Spelt	110
Wheat	115 to 120
Oats	105

Stocks of old grain are insignificant, both in the granaries and in the possession of consumers. Of potatoes a very good crop is expected. The vintage promises to be rich and of extraordinarily good quality, such as it has not been for many years. Of fruit there will be less than last year, a few cold days during blossoming time having caused damage.

HOLLAND.

[August 20, 1892.]

The result of the crops may be classed as very satisfactory in nearly every respect.

Of wheat the crop is somewhat belated. Plowing down of a part of it was also necessary in spring; still, a middling quantity was reached, while the quality is very good.

Rye was cultivated largely, on account of its high price last autumn, and the yield, besides, is unusually abundant.

Barley and oats were less cultivated, but turned out good.

Potatoes yielded exceedingly large quantities. They will take the first rank as a nourishment of the people.

The estimate of the crop is as follows:

	Per cent.
Wheat	100
Rye	112
Barley	93
Oats	80

The estimate of the average crop and of the import required in 1892–'93 is as follows:

Description.	Crop.	Import.
	Tons.	*Tons.*
Wheat	162,800	400,000
Rye	269,000	140,000

BELGIUM.

[August 18, 1892.]

Harvesting is nearly done. In some parts of the country, the crop is less in regard to quantity, but in respect to quality it is so excellent everywhere that the crop of 1892 (100 taken as an average) is estimated as follows:

	Per cent.
Wheat	100 to 105
Rye	105 to 115
Barley	90 to 95
Oats	78 to 80

FRANCE.

[August 17, 1892.]

To judge by the great demands which the consumption made on the import during the year from August 1, 1891, to August 1, 1892, the shortage of the wheat crop of 1891 has surpassed the judgment of the greatest pessimists. In spite of the large stocks, especially of foreign wheat, that were in the warehouses of France on August 1, 1891, there were about 14,000,000 hectoliters of wheat imported, of which this year's consumption received scarcely more than 3,000,000 hectoliters. The acreage cultivated with wheat this year was, as usual, about 7,000,000 hectares. The winter brought great cold, little snow, and withal such a drought set in with spring as has rarely occurred before. In many departments of eastern, middle, and northern France the plants did not come up or were destroyed by frost. The not insignificant losses caused thereby were partly made up by spring wheat. Spring wheat, which was cultivated but little in comparison to the general crop, will yield only a very inferior result—perhaps half of a usual crop. Winter wheat suffered also in most of the departments, so that the yield of straw and sheaves has remained far below a good crop; but the yield of kernels was so much the more abundant. The result of the crop may be stated to reach 100,000,000 to 105,000,000 hectoliters, and in view of the prevailing excellent qualities, it may be estimated at 94 per cent of a good crop of 112,000,000 hectoliters. During the year 1892–'93 we shall probably want an import of 15,000,000 to 20,000,000 hectoliters of wheat.

Rye and barley reached a common middling crop.

Oats suffered greatly from continued drought, and there will be a considerable shortage, which, however, will be lessened to a great degree by the considerable stock left of the crop of 1891.

GREAT BRITAIN AND IRELAND.

[August 22, 1892.]

Wheat harvesting is late this year. Though it has begun in the southern parts of England it will not be general in the north of the country before the beginning of September; hence it is difficult to make a final report now. If changes for the worse do not take place, the following may be stated: The area cultivated with wheat is, in round figures, 2,150,000 acres, against 2,300,000 acres last year, or less by 150,000 acres.

According to 325 reports that came in the following may be said:

Description.	No. of reports.	Per cent.
Above average	35	10.8
Average	124	38.1
Below average	166	51.1
Total	325	100

Besides the lessened acreage, the yield per acre will also be below the average, which is not to be wondered at, the weather at times having been very unfavorable. It may be assumed that the total yield will be about 1,000,000 quarters less than it was last year. The old stocks in the ports are very considerable, viz, about 4,000,000 quarters, against 1,300,000 quarters last year. The final result is likely to be that during the coming year Great Britain will have to import 19,000,000 quarters.

Of barley the estimated yield is as follows:

	Per cent.
Above average	50.2
Average	42.3
Below average	7.5

It is hoped that a great deal of the crop will be of good quality, and that barley will yield a better result than any of the other cereals.

The other crops may be estimated as follows:

Description.	Oats.	Beans.	Peas.	Hay.	Potatoes.	Roots.
	Per cent.	*Per cent.*	*Per cent.*	*Per cent.*	*Per cent.*	*Per cent.*
Above average	15	5.4	12.7	7.5	44.8	24.1
Average	33.3	36.1	47.5	9.7	48.6	46
Below average	51.7	58.5	41.8	82.8	6.4	29.9

Of oats the crop is decidedly scant. The crop of hay shows considerable shortage. Potatoes will yield a rich crop.

To this report has been added that the weather since has been exceedingly hot and dry; that the crop has been greatly hastened thereby, and the finishing of it, which will not take place before September, appears to be less endangered.

A middling crop being taken at 100, the yield of this year's crop, conditionally, may be estimated as follows:

Description.	Per cent.	Description.	Per cent.
Wheat	91	Peas	88
Barley	97½	Hay	80
Oats	90	Potatoes	97
Beans	88		

ITALY.

UPPER ITALY.

[August 14, 1892.]

In May quite good crops were expected, as they had wintered well, and spring crops showed their regular development; but with the beginning of June there came tropical heats continuing uninterruptedly for nearly a fortnight and damaging all the crops very badly.

The yield of wheat in upper Italy may be estimated at 75 per cent, of which two-thirds are of weak quality and the other third of good quality. This makes this year's yield larger by 5 per cent than last year's. In the whole country there were harvested 39,860,000 hectoliters of wheat, leaving a margin of 5,000,000 metric centners for import. A regular average crop is calculated at 43,500,000 hectoliters.

Of oats the yield in the whole country was 6,053,000 hectoliters, making a shortage of 1,500,000 hectoliters as compared with an average crop, which is taken at 7,500,000 hectoliters. The crop is especially bad in upper Italy, yielding scarcely 60 per cent.

The barley yield was 2,500,000 hectoliters in the whole of Italy, making a shortage of 1,000,000 hectoliters as compared to an average crop. In upper Italy, where cultivation of barley is not large, the yield is estimated at 50 per cent.

As to maize, nothing certain can be said as yet. The plant was retarded in its development, has suffered greatly from the drought in June, and we might probably not be far amiss in estimating the yield at about 75 per cent, *i. e.*, 10 per cent less than last year's crop.

Rye was but very little cultivated in upper Italy this year; but the yield is good and is figured at 80 per cent of an average crop.

Fruit, potatoes, and beans are a brilliant success, and the prospects for wine could be no better.

SOUTHERN ITALY.

[August 22, 1892.]

The present year shows a shortage of about 12 per cent on the continent and of about 20 per cent in Sicily, as compared to last year's crop; so that there have been imported into the southern Adriatic regions 6,316,326 hectoliters of wheat, 1,478,717 hectoliters of maize, 23,173 hectoliters of rye, and 2,140,724 hectoliters of oats during the present year.

Maize was very poor in our provinces, but abundant in the mountains.

In the southern Adriatic regions the crops were as follows: Wheat, 5,694,479 hectoliters; maize, 1,478,781 hectoliters; rye, 246,684 hectoliters; and oats, 1,318,492 hectoliters. In Sicily they yielded: Wheat, 6,970,426 hectoliters; maize, 70,327 hectoliters; and oats, 168,230 hectoliters.

EASTERN ITALY.

[August 21, 1892.]

The wheat yield is 85 per cent, or 15 per cent less than a middling crop. Maize yielded 90 per cent, or 10 per cent less than a middling crop. Of oats there is a middling crop. The millet crop is regular and of good qualities. Beans are a very weak crop.

Rice is good as yet, but in some places there are complaints of rust caused by fogs, which, if continued, may lessen the prospects for a good crop by nearly one-half, as harvesting does not take place before the beginning of September.

CENTRAL ITALY.

[August 20, 1892.]

In general there are complaints of a lessened yield in quantity, caused by too much rain and rime. These complaints are more frequent in the plains than in the hill lands, so that, on the whole, there will be only about 40,000,000 hectoliters. The qualities are good, and it is full grained and well ripened. The crops of the several zones are stated as follows, the quality being good in each case: Tuscany, 70 per cent of a middling crop; Umbria, 80 per cent; Maremma, 70 per cent; Romagna, 90 per cent; Abruzzi, 85 per cent.

The maize crop will probably be like last year.

SERVIA.

This year's wheat crop will vary greatly, as in one and the same district the yield per hectare frequently varies from 6 to 13 metric centners, and the weight per hectoliter from 72 to 78 kilograms. In many places wheat has suffered from rust and hard rains.

The acreage of this year, surpassing that of the normal acreage (215,000 to 220,000 hectares) by 15 to 18 per cent, the yield will be larger than last year's. For the season from August, 1892, to July, 1893, the quantity of wheat for export from Servia may be estimated at 900,000 metric centners.

Rye turned out very well. The estimated quantity for export during the coming season is 90,000 to 100,000 metric centners.

Oats and barley gave a tolerably good yield, although barley has suffered in color from rains. The estimated quantity of oats and barley for export is 150,000 to 160,000 metric centners.

The condition of the maize fields is excellent.

A middling crop being taken at 100 units, this year's yield may be estimated at:

	Per cent.
Wheat	105
Rye	120
Oats and barley	110

Old stocks are quite exhausted. The export has already commenced.

Plums promise to be better in quality than they were last year, but are said to be behind in quantity as compared to last year. In consequence of large stocks of brandy and alcohol, the plums available for export from Servia during the coming season may amount to from 210,000 to 220,000 metric centners.

ROUMANIA.

JAKOMITZA.

[August 19, 1892.]

In this district much more wheat has been cultivated this year than ever before. The crops had wintered well and promised a rich yield, but the scorching heat of June and the want of rain, together with blight and rust, have damaged the quality; a large number of the kernels shriveled and ripened when not yet sufficiently developed. On the other hand, spring crops, barley excepted, are excellent, and maize especially promises an unsurpassed yield.

Wheat is satisfactory in quantity, yielding 20 to 25 hectoliters per hectare; the crop may be considered middling. The quality, as stated before, has suffered. There are many rusty, and also thin and imperfectly ripened, qualities. In this district both quality and quantity vary in a striking manner. There are places yielding from 25 to 32 hectoliters of fine, clean wheat per hectare, weighing from 77 to 81 kilograms, and there are other places which did not yield half of that quantity, being withal without color, of light weight, and rusty.

Rape was cultivated in large quantities, wintered well, but was greatly damaged by rime and by worms. The yield is inconsiderable.

Rye was cultivated in larger quantities than last year, in consequence of the high price of that article last year. The yield is estimated at 10 per cent above middling; in quality it is generally weak, with thin, shriveled kernels of dark color, having a weight of 64 to 69 kilograms per hectoliter.

The barley yield is 15 to 20 per cent below middling. The quality suffered by much rain. The kernel in general is dark and yellow, the weight varying from 55 to 64 kilograms per hectoliter.

Oats throve well for some time and would have yielded an exceedingly rich crop if the tropical heat had not shriveled the kernel during its formation. The yield, both in quality and in quantity has remained below that of last year.

The acreage cultivated with beans has been less than last year's acreage, but the yield is better in regard to quantity; the quality, however, has been impaired by much rain, and there are many spoiled and unripe seeds. A pretty large old stock is on hand, and export has greatly neglected that article.

Millet is beautifully developed, yielding a crop of 20 to 30 per cent above middling and of fine, heavy quality.

Maize is promising an especially rich yield.

Of the stocks of last year there remained unsold 10 per cent of the wheat crop, besides some beans and a small lot of maize.

LITTLE WALLACHIA.

[August 16, 1892.]

The wheat yield is very good, and may be classed as good middling, with an average yield of about 800 kilograms per pogon. But the quality leaves much to be wished for. Besides the large amount of wheat that has been beaten down and yields only weak, pressed kernels weighing 68 to 72 kilograms, frequent rains have prevented the drying of the sheaves in the field; and by far the greater part of the wheat thrashed as yet is of tough, pale quality, weighing 70 to 74 kilograms, and requires at least four more weeks of manipulating to be fit for being transported.

Rye yielded a good middling crop of about 500 kilograms per pogon, the quality being satisfactory and the weight 69 to 73 kilograms.

The barley and oats yield is good, being about 600 kilograms per pogon.

Maize holds out the best of expectations; provided the favorable weather will continue, there will be a yield of at least 1,000 kilograms per pogon. Old stocks of maize are obtainable only off Danube landing places, and even there only in very modest quantities.

Of rape the yield is weak and of miserable quality.

A middling crop being taken at 100, this year's crop is estimated as follows:

	Per cent.
Wheat	110
Rye	90
Barley and oats	85
Rape	40

COVURLIN.

The estimated yield of the crop of 1892, in comparison with 1891, is as follows:

Produce.	Acreage in 1892.	Estimated yield in 1892.	Yield in 1891.
	Hectares.	*Hectoliters.*	*Hectoliters.*
Wheat	22,090	360,000	265,844
Rye	20,600	300,000	220,304
Barley	17,649	250,000	274,312
Oats	4,768	85,000	94,209
Rape	800	4,500	5,758
Millet	1,307	9,000	7,695
Maize	37,128	300,000	279,618

TUTOVA.

[August 16, 1892.]

Thrashing having been nearly finished, the crop, which varies greatly and in some places will scarcely return the seed, may be stated to be as follows:

The yield of winter wheat is 10 to 15, rarely 18, hectoliters per hectare, against 12.2 hectoliters in 1891. It is of weak quality, the kernel being shriveled and in part rusty. The yield is below middling.

The rye yield is 12 to 15 hectoliters per hectare, against 12.9 hectoliters in 1891; quality good; kernel, whitish gray and small; yield, middling.

Of barley the yield is 20 to 25 hectoliters per hectare, against 30.1 hectoliters in 1891; quality, weak; kernel, grayish, some whitish; yield, weak middling.

The rape yield amounts at most to 20 railroad carloads. The produce is about the same as last year, *i. e.*, weak.

Beans are satisfactory.

Maize promises a rich yield.

Wine prospects are favorable.

Aftergrass, in consequence of frequent dryness, was very weak, which may prove fatal to the keeping of cattle during winter.

There may be on hand a stock of 15,000 hectoliters of last year's wheat.

ARGES, BUZEN, DAMBOVITZA, MUSCEL, AND PRAHOVA.

[August 16, 1892.]

Winter crops were retarded by extraordinary and continued drought; but the apprehensions that all the crops would be destroyed proved groundless, as the crops developed finely under the sheltering snow cover. The tilling of spring seeds was effected under favorable auspices; but, in consequence of the drought setting in in April, barley and oats were suffering and were but thinly scattered, while, on the other hand, the weather proved favorable to the development of maize. Prospects in general were favorable in spring. Harvesting commenced on June 20, and, with short interruptions on account of rain, was quickly finished.

Rape had been cultivated to a rather large amount, but suffered so much from last year's drought that the greater part had to be plowed down in spring. The yield is 25 below a middling crop of 100 units.

There were prospects of a very good wheat crop, but afterwards rust set in, which in some places also seized the ears, so that the yield was lessened in quality and quantity. Both the cutting and the first thrashing were begun in rainy weather, so that a part of the wheat is wet and must be prepared in warehouses to be salable. Thrashing at a later time was performed during dry weather, so that the wheat could be housed in a dry condition. Although the yield differs greatly, still a good middling one may be calculated on at the figure of 80 of a middling crop of 100 units.

Rye has been little cultivated. The quality is good. The yield is 60 below 100. Rye is being thrashed at present.

As to barley and oats, thrashing has commenced, and these products, too, have suffered in quality from rain. The yield may be estimated at 60 below 100.

A very good yield of maize may be calculated on.

The thrashing of millet has just begun. A good middling crop, both in regard to quality and quantity is expected.

BRAILA AND JALOMITZA, FUTNA, RIMNIK-SARAT, AND TEKUTSCH.

[August 16, 1892.]

The acreage cultivated with grain in Braila and Jalomitza districts is estimated at 460,000 hectares, as follows: Wheat, 78,000 hectares; maize, 150,000 hectares; and barley, 180,000 hectares. Rye and oats were little cultivated in these two districts, viz, in the Braila district about 15,000 hectares and in Jalomitza district 22,000 hectares.

This year's yield of the crops in general is satisfactory. The yield of wheat in the Braila district was 17½ hectoliters per hectare, against 14 hectoliters in 1891; in Jalomitza, 19 hectoliters, against 14 hectoliters in 1891. The quality for the greater part is good, but partly rusty from wet. The yield of rye in Braila was 18 hectoliters per hectare, against 12 to 14 hectoliters in 1891; in Jalomitza, 17 hectoliters, against 11 hectoliters in 1891. It was of good quality. Of barley the yield in Braila was 24 hectoliters per hectare, against 19 to 21 hectoliters in 1891; in Jalomitza it was 27 hectoliters, against 21 to 24 hectoliters in 1891. In quality it was pretty good. The yield of oats in Braila was 30 hectoliters per hectare, against 20 hectoliters in 1891; in Jalomitza, 32 hectoliters, against 26 hectoliters in 1891. The quality was good. Of millet only a little was cultivated, and that was for home consumption.

The rape crop was almost entirely destroyed in spring. Maize in both the districts stands excellent this year. A very rich yield is expected.

A middling crop being taken at 100, the crops in the district of Braila are thus figured:

Crop.	1892.	1891.
	Per cent.	*Per cent.*
Wheat	102	60
Rye	108	80
Barley	108	90

The yield in the district of Jalomitza is more favorable by a small percentage, both in regard to quantity and quality.

At the end of July 452,650 hectoliters of cereals were in the granaries of Braila.

In the districts of Putna, Rimnik-Sarat, and Tekutsch there were cultivated with wheat about 66,000 hectares; rye, about 26,000 hectares; barley, about 53,000 hectares. The yield per hectare was as follows: Wheat, 14 hectoliters of good average quality, against 13 hectoliters in 1891 of middling good quality; rye, 11 hectoliters of middling quality, against 8 hectoliters in 1891 of bad quality; barley, 16 hectoliters of good quality, against 11 hectoliters in 1891 of middling quality.

A middling crop being taken at 100 will give the following figures:

Crop.	1892.	1891.
	Per cent.	*Per cent.*
Wheat	112	100
Rye	90	70
Barley	115	80

This makes the crop of 1892 a good middling crop, as compared with the bad middling crop of 1891.

Of last year's grain crop hardly any stock is on hand for this year's campaign. Almost the whole produce of grain is at once forwarded to the ports of the Danube; only about half of the maize is retained for local consumption.

MOLDAVIA.

[August 16, 1892.]

This year's crop yield of Moldavia in general is by no means satisfactory, and will scarcely be a weak middling crop. The acreage of this year appears in general to be less by 15 to 20 per cent than that of last year. Relatively more satisfactory are the yields of the districts of Bacau, Roman, Suczawa, and Neamtz. While Bottuschau and Dorhoi have a weak middling crop, Jassy, Vaslui, Falcin, and also the other parts of Moldavia have a very unsatisfactory yield.

Of wheat the acreage was 235,000 hectares, as compared with 280,000 hectares in 1891. The estimated yield is about 3,100,000 hectoliters, against 4,900,000 hectoliters in 1891, making 13⅛ hectoliters per hectare, or about 75 per cent of a normal average crop. The quality is weak middling; most of the kernels suffered from rust. Test thrashing yielded mostly 70 to 77 kilograms per hectoliter; heavier sorts will rarely be met with here.

Rye is unsatisfactory throughout Moldavia, Neamtz district perhaps excepted. In some places the crop has been entirely ruined. The acreage is about 22,800 hectares, compared with 28,500 hectares in 1891. The estimated yield is only 70,000 hectoliters, as compared with 250,000 hectoliters in 1891, which will scarcely suffice for seed and consumption, and leaves nothing for export. The average yield per hectare is only 8 hectoliters, hence scarcely 50 per cent of a middling crop.

Of oats only a weak middling crop is to be expected—15 hectoliters per hectare, or about 85 per cent of a middling crop. The quality is satisfactory.

Barley is weak middling, both in regard to quantity and quality. The average yield is about 12 hectoliters per hectare.

Maize is standing excellent, promising quite an extraordinary yield.

Hay and fodder turned out bad, in consequence of continued drought. In some places lack of fodder may be expected.

The vine is very satisfactory, promising an excellent vintage.

By the excellent crops of Wallachia the shortage of Moldavia will be made up in part, and the total aspect of this year's crop of Roumania will be far more favorable.

GREAT WALLACHIA.

[August 15, 1892.]

Great Wallachia comprises the following districts: Ilfov (Bucharest), Vlasca (Giurgevo), Teleorman (Turnu Magurele), Olt (Slatina), Arges (Pitesti), Muscel (Ploesti), Buzeu (Buzeu), Ramnic-Sarat (Ramnic-Sarat), Braila (Braila), Jalomitza (Calarasi).

Wheat and rye wintered well. Rape suffered in autumn by continued drought, and, in spite of later rains, could not recover. Barley, oats, and maize were much cultivated in spring, especially as the greater part of the rape was plowed down and replaced by maize. In consequence of the weather, the ripened grains vary greatly.

As mentioned before, the cultivation of rape was reduced to a small area, and this, too, yielded a weak result, scarcely to be estimated at 70 per cent of a middling crop. In consequence of rain during harvest time, the quality in some places leaves much to be wished for.

Of wheat the estimated crop is 25 per cent more than a middling crop. A large part is excellent in quality, weighing 78 to 81 kilograms per hectoliter. Some part of the later thrashing has lost in color and weight, weighing only 74 to 78 kilograms per hectoliter.

Not much rye is cultivated, and only in a few districts. The result is the same as with wheat, with the difference that the yield is to be estimated at only a middling crop. Old stocks were exhausted long ago.

Barley is a full middling crop in regard to quantity. A part of it suffered in quality (color) by rain, which, however, does not exclude the occurring of light-colored, heavy qualities weighing 63 to 65 kilograms per hectoliter.

Oats have done well. The yield is 40 per cent more than a middling crop, and the quality will vary.

Of millet the quantity and quality are good. The maize plant stands excellent and promises very much. The acreage being larger this year than usual, one of the richest crops of this country is calculated on.

RUSSIA.

COURLAND AND LITHUANIA.

[August 20, 1892.]

The crops of these governments at present promise to be good. Rye is now being harvested, and is favored by very fine weather. It is said to thrash well and to be of excellent quality.

The reaping of wheat, barley, and oats will begin in about a fortnight. As far as can be judged at present, the following may be said: Wheat, only small acreage, 100 per cent; rye, average about 90 per cent, weight 119 to 120 Dutch pounds; barley, up to 100 per cent; peas, particularly good; hay and clover, excellent; potatoes, middling good; flax and hemp, excellent.

RUSSIAN POLAND.

[August 18, 1892.]

Last year's bad crops and the great quantity requisite for consumption caused a reduction of the seed for sowing and a lessening of the acreage cultivated. Still, the yield of the crop, notwithstanding the continued drought, especially in the northern governments (Lomza, Suwalki, and Siedlec), is a good one almost without any exception.

A middling crop taken at 100, the crops of 1892 yielded the following results:

	Per cent.
Wheat	100
Rye	115 to 120
Barley	100
Oats	70

Rye and barley are particularly fine, their quality and heavy kernel being very satisfactory. Wheat has suffered from blight in many parts. Oats are the least good crop in regard to quality and quantity; the yield of straw is good. The first cut of hay and clover proved abundant. Potatoes did well, but will suffer considerably if rain does not set in. Prospects for sugar beets are favorable. Peas are often worm-eaten, representing a crop below middling.

BESSARABIA.

[August 15, 1892.]

In consequence of continued drought, the autumn of 1891 was very unfavorable to winter crops. During winter there was only very little snow; and as during spring, too, with the exception of small, transient showers, the dryness continued until June, with high winds prevailing for weeks, it was to be presumed that the crops would not be satisfactory. No export of grain, maize perhaps excepted, will take place from Bessarabia.

Rape is totally wintered out; wheat and rye are partly wintered out and in part have come up irregularly.

A good crop taken at 100 units, the crop of the whole government may be estimated as follows:

	Per cent.
Wheat and rye (2 to 3 tschetverts per dessiatine)	25
Barley and oats (3 to 4 tschetverts per dessiatine)	35
Maize (5 tschetverts per dessiatine)	50

In the districts of Bender and Akkermann the seed for sowing, with the exception of maize, has not been recovered.

Hay could be cut only in the lower parts situated near the rivers, and only little of it there. Straw has remained small, so that there will be want of fodder in winter. The vintage will be inferior, too.

Stocks of grain, small lots of maize excepted, are exhausted. What there is of wheat and rye is used up by the steam mills for home consumption.

KHERSON AND YEKATERINOSLAV.

[August 19, 1892.]

In the parts near Odessa the crop of winter wheat is very weak, but the quantity is made up in part by the good crop of spring wheat (*ghirca*) obtained, especially in the eastern direction. The latter, however, according to the present samples, appears to suffer much from rust.

Of rye, too, there are no considerable quantities in the government of Kherson; however, along the Dnieper, a good result has been attained, and the latter country in general is better off in regard to grain then the region near Odessa.

Barley yielded a pretty rich result. It was first of light color without blemish, but suffered afterwards by rain, and is now mostly turned yellow. On the other hand, the rains that damaged the quality of the cut grain have bettered the endangered condition of maize.

The weight of wheat is pretty high; that of rye can not yet be ascertained on account of want of large supplies; barley is chiefly middling.

Taking an average crop at 100 units, the crop, as far as can be judged at present, may be estimated as follows:

	Per cent.
Wheat	80
Rye	70
Barley	110

PODOLIA.

[August 17, 1892.]

According to the present results, the crops may be judged as follows:

Wheat is fresh and full in kernel, fine of color, and heavy in weight. The yield per joch is 7 to 8 metric centners.

Of rye the yield is weak—5 to 6 metric centners per joch. The quality is satisfactory.

The barley yield is weak, being 5 to 6 metric centners per joch. The rain during harvesting has lessened the quality. The color is mostly dark. There will probably be little brewing barley of light color.

Oats promise the same result as barley. The kernel is mostly of dark color.

Peas give a very good result. The quality is fine. The yield is 7 to 8 metric centners per joch.

Beans are a failure.

Rape and linseed are bad, the yield being scarcely 3 to 4 metric centners per joch.

Of clover little was harvested. It reaches scarcely one-half of last year's crop.

Potatoes and sugar beets are fine, promising a good crop.

A middling crop being taken at 100, this year's crop may be estimated about as follows:

Crop.	Per cent.	Crop.	Per cent.
Wheat	75	Oats	60
Rye	65	Peas	80
Barley	60		

Of old stocks there are none on hand.

NORTHERN RUSSIA—LIVONIA, VITEBSK, VORONEZH, AND TAMBOV.

[August 20, 1892.]

In northern Russia the rye crop is satisfactory and essentially better than might have been expected. Wheat is less satisfactory. Summer grain could not be sowed until late, and it promises the same crop as last year.

In Livonia the seed had also wintered well, justifying the best of hopes. But the cold, rainy, and windy weather of June was not very favorable to the winter crops then in blossom. Especially the crops in the district of Walk have suffered from superabundant rains. The fields were thoroughly wet, thereby causing the straw to turn yellow in many places. The development of potatoes was also hindered by the wet, and rotting was caused here and there. Hay could not be cut before the middle of June, while usually this always was the case before St. John's day. Although the grass grew well, the hay does not promise to be good in quality on account of the unfavorable weather. In the other districts of this government rye and wheat are more satisfactory than last year, and a better yield of summer grain is expected.

In the government of Vitebsk the crops, both of winter and summer grains, are essentially better than last year's.

In the government of Voronezh winter grain, as it was last year, is this year a total failure. After the continued drought of spring the weather changed suddenly in the last days of May and abundant rains fell, without improving the bad condition of the winter crops. Winter wheat suffered most, and in the southern parts the fields had to be plowed down and sown with summer seeds. Though the spring seeds had come up weak in the beginning, they improved considerably by the rains during May; so that, on the whole, a better yield of spring crops may be expected.

In the government of Tambov, the winter seeds had sprung up satisfactorily and were refreshed by the rains of April, and spring crops, too, could be sown during favorable weather.

In some of the districts, as in Borissoglebsk, good, heavy rye has been harvested, and in some places 100 poods were reaped from 1 dessiatine.

By reason of last year's failure, acreage in general has been smaller, because cattle and seed grain were partly wanting.

An average crop being taken at 100, the average yield of this year's crop in the above districts, without taking into consideration the lessened acreage, may be estimated as follows:

	Per cent.
Rye	85
Wheat	80
Barley and oats	75

CENTRAL RUSSIA—KIEV, VOLHYNIA, KOORSK, OREL, POLTAVA, CHERNIGOV, AND KHARKOV.

[August 13, 1892.]

For many years there has not been so bad a crop as there is this year. Only a few regions that had rain in April will yield a full winter crop, while summer grain almost everywhere, without any exception, has failed. Straw is wanting everywhere, too, as the tropical heat and the want of rain prevented the plants from growing. A great deal of grain ripened too quickly, and since the memory of man harvesting did not begin so soon as it has done in this unlucky year; still, it is impossible to state reliable figures for the crops at present, as every statistic is wanting and the crops vary uncommonly. Taking a middling crop at the figure of 100, this year's crop may be estimated as follows:

Government.	Wheat.	Rye.	Barley.	Oats.
Kiev	65 to 75	65 to 75	35 to 40	50 to 60
Volhynia	75 to 85	75 to 85	40 to 50	55 to 65
Koorsk	50 to 55	60 to 70	35 to 45	55 to 65
Orel	45 to 55	50 to 60	35 to 45	55 to 65
Poltava	35 to 45	45 to 55	35 to 45	45 to 55
Chernigov	65 to 75	60 to 70	45 to 55	65 to 70
Kharkov	40 to 50	45 to 55	40 to 50	50 to 60
Average for central Russia	60 to 65	65 to 70	40 to 50	60 to 65

Oilseeds were no better than breadstuffs. Rape reached scarcely one-fourth of a common middling crop. Beets and linseed promise at most half a crop.

The stocks of grain, especially of wheat, though not so large as usual, are not inconsiderable.

KHARKOV.

[August 2, 1892.]

In spite of the failure of the winter crops, the yield of this year will reach a middling crop, thanks to the good result of the spring crops, although insects and continued droughts had an injurious effect.

A middling crop taken at 100, the following results may be stated: Spring wheat, above 100 per cent; barley, above 100 per cent; oats, 100 per cent; winter wheat, 75 per cent; rye, 75 per cent.

ESTHONIA.

[Revel, August 17, 1892.]

As compared with former years, vegetation is backward at least from three to four weeks.

Since the beginning of spring there was almost uninterrupted cold and rainy weather, retarding the whole vegetation. Winter rye has resisted best, but is not yet cut.

To judge now, even approximately, of the results of spring grain would be very hazardous. In order to attain ripeness, summer must last at least one month longer and be free from frost, two circumstances which, although they have happened together, are of very rare occurrence. Clover and grass grew satisfactorily, but on mowing were spoilt to a greater or less degree by daily rains. The securing of clover has not yet been finished in many places.

One hundred being taken as a middling crop, this year's crop may be estimated at:

	Per cent.
Winter rye	60 to 70
Clover	80 to 90
Meadow hay	75 to 80

Spring rye, barley, and potatoes are very backward. The final result will depend entirely on the weather of the next few weeks.

CONGRESS POLAND.

[August 18, 1892.]

A middling crop being taken at 100, this year's crop may be estimated as follows:

	Per cent.
Wheat	100
Rye	100
Barley	100
Oats	70

The acreage for these grains may be regarded as stable, changes rarely occurring.

After so very bad a year as the last was, a mistake in estimating may easily occur, so much the more as rains were not equally distributed, and the final results vary greatly.

The cutting of meadow hay and first cut of clover were not unsuccessful, and the harvesting of rye and wheat were favored by very good weather. Rye is particularly fine colored and heavy; it frequently shows the weight of 130 pounds. In some parts trial thrashing of sixty middle-sized rye sheaves yielded 60 kilograms of kernels and more. Wheat, though a good harvest, is suffering here and there from rust. Barley is very fine in color, full, and heavy. More care is turned to the cultivating of barley with each year, and finally we have brought it to fine brewing barley. Oats, although fine in color, have not answered expectations. The straw is short and the kernel light. Rape remained below middling. Many rape fields were plowed down in the spring. Potatoes want a good rain. If the weather is favorable a full middling crop, and more perhaps, may be expected.

KOVNO, GRODNO, VILNA, MINSK, VITEBSK, SMOLENSK, AND MOHEELEV.

[August 18, 1892.]

The results of the crops can only be given approximately. In general, the rye crop and the greater part of the winter wheat crop are very favorable.

A middling crop being taken at 100, this year's crop may be estimated as follows:

Government.	Wheat.	Rye.	Barley.	Oats.
Kovno	100	90	105	115
Grodno	110	115 to 120	95 to 100	95 to 100
Vilna	100	100	110	100
Minsk	110	115 to 120	115	110
Vitebsk	100	105	100	100
Smolensk	105	110	95 to 100	95 to 100
Moheelev	110	115	90 to 95	90

Reports on pulse, buckwheat, and linseed are very favorable up to the present.

KHERSON, YEKATERINOSLAV, POLTAVA, AND SOUTHERN PART OF KIEV.

[August 20, 1892.]

A large part of winter grain was ruined and had to be plowed down and replaced by spring seeds.

Winter wheat will be a small yield. It is partly bad and partly middling, on an average perhaps 60 per cent of a middling crop. The quality would have been fine had it not suf-

fered considerably from continued rains during harvesting, causing the loss of a certain part of the small yield. Summer wheat in the southern parts of the government of Kherson and in the government of Yekaterinoslav will yield a better crop; the average is estimated at 90 per cent, while in the governments of Kiev and Poltava it is not estimated above 50 per cent.

Rye is bad and will scarcely reach 40 per cent of an average crop; only the government of Yekaterinoslav will have a better result.

Barley has done best of all the grains. Part of it will probably yield above 100. During cutting it was of excellent quality, but suffered afterwards from rain.

As to oats, the results are unknown as yet.

Oilseeds have been a failure.

In general, it can not be stated yet what damage the continued rains during harvesting have caused to grain. Only of late more constant weather has set in, making it possible to begin with thrashing. More exact results will not be known before the lapse of three or four weeks.

EGYPT.

This time we have unfavorable crops. This comes quite unexpectedly, as the Nile reached its full height (22⅛ pics) and the crops in the fields held out the best of promises. With the thrashing there came disappointment, and we have more reason this year than ever before to complain of the total lack of reliable official reports on the condition of crops, as this shortcoming causes a considerable damage to our trade and to the country in general. The incorrect optimistic reports in the beginning of spring caused a few business houses to make large sales in foreign parts, and now, in order to fulfill obligations, they must make higher offers than buyers make for consumption, thereby losing their money and causing dearness in the country.

The cause of the failure of the crop is not quite evident, but may be ascribed to the hot southern winds (*hamsin*) occurring this year more frequently than usual. Plants requiring more heat or more able to withstand it throve well, not only cotton and sugar cane, but also beans, which always yield a satisfactory, if not a brilliant, crop.

Of wheat a smaller crop than last year's by fully 15 per cent is expected. The export of the crop amounted to 850,000 metric centners. With the beginning of the new crop there still remained in the country 100,000 metric centners of the old crop. With regard to the present crop the quantity available for export is estimated at not above 200,000 metric centners, unless a larger import of foreign wheat or flour takes place.

Beans in upper Egypt are somewhat above middling; in lower Egypt they are not satisfactory, so that the north must draw its supplies from the south. On an average they are about 10 per cent less than the last crop, of which 1,650,000 metric centners were exported. The quantity available for export may be estimated at 1,225,000 metric centners.

The winter crop of maize, which begins in December, was about 5 per cent less than last year; 250,000 metric centners of it have been exported, but that export has not been justified, as there will now be the necessity of importing maize to cover home consumption until the coming in of the autumn crop.

Barley is a failure. There is scarcely one-half of last year's crop, of which 250,000 metric centners were exported, leaving a stock of 20,000 metric centners. There is none available for export this year.

As to lentils, there are unfavorable reports from the interior, and it is about 15 per cent less than last year. The export of last year's crop was unusually large, reaching 150,000 metric centners and leaving a stock in the country of about 5,000 metric centners. The quantity available for export this year will scarcely reach 50,000 metric centners.

A middling crop being taken at 100, this year's crop may be estimated as follows:

Crop.	Per cent.	Crop.	Per cent.
Wheat	80	Barley	50
Beans	105	Lentils	90
Maize	100		

BRITISH EAST INDIA.

The wheat crop of 1891–'92 was, in spite of the good prospects at the beginning, decidedly unfavorable, taken on the whole, and especially so in regard to northern India.

In the Punjab the early rains were sufficient and the acreage extended. Up to the middle of January the condition of plants was sound, but the winter rain not setting in and the abnormally high temperature of March and April caused great damage to largely extended areas; so that the crop, which at first promised to be above the average, has now become one of the worst that this province has had for years.

In the Northwest Provinces and Oudh the early rains were less satisfactory than in the Punjab, and the acreage in no case surpassed the normal one. Though the winter rain was behind in time, still it brought sufficient humidity in February, and an extraordinarily good crop seemed to be sure. These hopes, however, were disappointed to no small degree, as in March and April unusually hot winds occurred, badly damaging wheat, especially in the western districts, where it ripens at a later time.

In Bengal, the year was unfavorable from the beginning to the end. The dry weather, obstinately continuing from October till the middle of February, was a hindrance to sowing and prevented the growing of the plants. The rains, which set in late, could not make good what had been spoiled, and, finally, the hot south wind, which is so very pernicious, also set in.

In the Central Provinces less had been cultivated on account of the rain not setting in. Abnormal dryness, lasting from October to January, contributed to influence the condition of plants most badly. In February rain set in, holding out better prospects, and in some parts of the country even a full crop might be calculated on. But the early hot winds dried up the wheat kernel, and the crop must be called a bad one.

In Berar the state is the same in every respect as it is in the Central Provinces.

In the presidency of Bombay northern Daccan displays good fields and favorable crops where it has been irrigated. In southern Daccan, where dryness nearly caused a famine, the crops are simply a failure. In Sind, irrigation was very deficient, and, in spite of a larger acreage, the crop is bad.

In the whole of India, that is, for those provinces and states from which reports are at hand, the acreage shows a decrease of 2,456,000 acres (9.2 per cent) as compared with the normal average and a decrease of 2,488,000 acres (9.3 per cent) as compared with that of last year. The acreage and yield will be seen from the tables below. The general result may be stated as follows: In the three chief grain-growing areas, *i. e.*, Punjab, Northwest Provinces, and Central Provinces, the acreage shows a decrease of 910,000 acres as compared with a normal year and of 1,900,000 acres as compared with that of last year, which, however, was unusually large; the yield of wheat shows a shortage of 650,000 tons (19.2 per cent) as compared with an average crop and a shortage of 1,018,000 tons (20.8 per cent) as compared with last year's crop.

The normal average yield of an Indian wheat crop is estimated at 6,737,000 tons; last year's crop yielded 6,876,000 tons and this year's only 5,442,000 tons.

Table showing the acreage and increase or decrease of the wheat crop of the different provinces of India in 1891 and 1892.

Provinces.	Acreage.			Increase or decrease as compared to—	
	Normal.	1890–'91.	1891–'92.	Normal.	Last year.
	Acres.	*Acres.*	*Acres.*	*Per cent.*	*Per cent.*
Punjab	6,468,000	7,074,000	6,224,000	— 3.7	—12
Northwest Provinces and Oudh	4,847,000	5,207,000	4,695,000	— 3.1	— 9.8
Central Provinces	4,271,000	4,294,000	3,751,000	—12.1	—12.6
Bombay	2,566,000	2,393,000	2,145,000	—16.4	—10.3
Sind	363,000	472,000	475,000	+30.8	+ 0.6
Berar	915,000	817,000	887,000	— 3	+ 8.5
Bengal	1,661,000	1,504,000	1,190,000	—28.3	—20.8
Rajputana	1,819,000	1,507,000	1,471,000	—19.1	— 2.3
Other	3,634,000	3,308,000	3,250,000	—10 5	— 1.7
Total	26,544,000	26,576,000	24,088,000	— 9.2	— 9.3

Table showing the yield and increase or decrease of the wheat crop of the different provinces of India in 1891 and 1892.

Provinces.	Yield.			Increase or decrease as compared to—	
	Normal.	1890–'91.	1891–'92.	Normal.	Last year.
	Tons.	*Tons.*	*Tons.*	*Per cent.*	*Per cent.*
Punjab	1,752,000	2,071,000	1,392,000	—20.5	—32.7
Northwest Provinces and Oudh	1,656,000	1,745,000	1,579,000	— 4.6	— 9.5
Central Provinces	950,000	910,000	737,000	—22.4	—19
Bombay	976,000	553,000	428,000	—36.7	—22.6
Sind	184,000	197,000	116,000	—36.9	—42.1
Berar	121,000	95,000	80,000	—33.8	—15.8
Bengal	439,000	400,000	250,000	—43	—37.5
Rajputana	524,000	395,000	362,000	—30.9	— 8.3
Other	435,000	510,000	493,000	+14.5	— 2
Total	6,737,000	6,876,000	5,442,000	—19.2	—20.8

This year, in contrast with most of its predecessors, was characterized by especial dryness, the pernicious consequence of which made itself felt particularly in the central part of the presidency of Madras, in Bombay, Deccan, Rajputana, Bengal, and in Burmah. Into these parts a lively import of breadstuffs took place, consisting almost exclusively of rice and millet, partly because the population there does not consume any wheat in general and partly because wheat is the dearest of breadstuffs. To these rice and millet imports the chief wheat-growing provinces have contributed no inconsiderable quantities, which could not have been done if there had not been stored considerable stocks of the rich wheat crop of 1890–'91.

The Indian Government closes its official report of July 11, 1892, with the following words:

"Should, however, in those districts, the want of breadstuffs continue or extend to larger parts of the country, a rise of the prices must be expected, the direct consequence of which would be that wheat would be retained from export, and the quantity available for export would have to be used for home consumption."

NORTH AMERICA.

UNITED STATES.

[Telegraphic report of the crop in the United States by the imperial and royal Austro-Hungarian consulate-general at New York—cablegram of August 28, 1892.]

The wheat crop of last year amounted to almost 612,000,000 bushels; this year it is about 520,000,000 bushels.

The rye crop of last year amounted to 36,000,000 bushels; this year, about 29,500,000 bushels. The quality is good. The export during the fiscal year 1891–'92 was 12,000,000 bushels.

The maize crop of last year amounted to 2,000,000,000 bushels; this year's crop is estimated at 1,725,000,000 bushels. The quality is good. The export during the fiscal years 1874–'75 to 1891–'92 was as follows:

Year.	Export.	Year.	Export.
	Bushels.		*Bushels.*
1874–'75	20,000,000	1883–'84	44,800,000
1875–'76	52,000,000	1884–'85	52,000,000
1876–'77	73,000,000	1885–'86	65,000,000
1877–'78	80,000,000	1886–'87	41,500,000
1878–'79	85,000,000	1887–'88	24,250,000
1879–'80	98,000,000	1888–'89	69,000,000
1880–'81	93,000,000	1889–'90	102,000,000
1881–'82	44,000,000	1890–'91	31,000,000
1882–'83	40,000,000	1891–'92	76,000,000

CANADA.

[Telegraphic report on the crop of Canada by the imperial and royal Austro-Hungarian consulate-general at Montreal—cablegram of August 28, 1892.]

Last year's wheat crop amounted to 60,000,000 bushels, this year's to 62,000,000 bushels. The quality is good. The export during the fiscal year 1891–'92 amounted to 500,000 barrels of flour, 7,500,000 bushels of wheat, and 2,000,000 bushels of rye.

HOP-CROP REPORT.

AUSTRIA-HUNGARY.

The development of the hop plant this year has at no time held out any rich promises. Nevertheless the state until the middle of this month was such as to justify the expectation that the yield would not be much behind that of last year, and that the quality would be unusually excellent, as the plant in general, and with but few exceptions, had remained free from disease and vermin. But the quite uncommon tropical heat of the latter days has wrought a quick change. The plant, especially in lighter soil, could not sufficiently withstand the abnormal temperature; it began to turn yellow, and complaints of copper rust were made. Although the crop has begun, yet it is difficult to give positive figures of the result, for much, if not all, will depend on how soon the present African heat will give way to a cooler temperature and to rain.

The following estimate is based on the condition of the hop gardens and on the supposition of an early favorable change of the weather.

Of the Austrian hop-producing countries, Bohemia is taking the lead again, both in regard to quantity and quality.

In Saatz only the light soils could not quite resist the tropical heat, while heavy soil and good situations have been spared till now, so that we may safely expect the product to be mostly of excellent quality. At the beginning of last week the quantity might still have been

estimated at 60,000 to 65,000 centners; but to-day it could not be estimated at a higher—but still considerable—figure than 50,000 to 55,000 centners.

Auscha Rothlande has likewise been shortened in yield, but only on light soils and hill-sides; heavy soils are uninjured. The estimate of 40,000 cwts. last week will probably reach 30,000 to 35,000 cwts.

Grünlande will yield about 25,000 cwts.

In Moravia the not considerable hop area will yield about 4,000 cwts.

Galicia calculates on about 15,000 cwts.

Upper Austria will have a yield of about 7,000 to 8,000 cwts., which is a somewhat larger quantity than last year's.

Styria's crop is estimated at about 12,000 cwts.

SAATZ DISTRICT.

[August 22, 1892.]

The new plants of the latter years did not bear fully until this year; consequently the hop acreage of Saatz must be considered essentially increased, and be estimated at about 7,000 hectares. An estimate in figures of this year's yield is at present very difficult, so much the more so as the condition of the gardens must be considered quite unequal. By the quite abnormal heat of the last ten days the produce was forcibly ripened, and the more there is gathered, the greater the conviction must be that planters have overestimated the result of their fields. This is fully founded on the frequent change of temperature which the plants had to endure during the previous months and by the unequal condition of the plants which was caused thereby.

While the chief gardens—in part the city of Saatz, Goldbach, and Egerthal, and also the better locations—resisted better the inclemency of the weather, there are still many that leave much to be wished for. In explanation thereof, the following period of vegetation is here stated:

Cultivation began somewhat later in spring, and especially the young sprouts of the plants that had been trimmed later had to suffer from the cool temperature of May. Not till the warmer weather at the beginning of June, in connection with rain showers, was vegetation promoted somewhat more vigorously. But the unequal growth itself could not be entirely equalized, so much the less as the nights were mostly cool, and during daytime the plants suffered from high temperature and from hot winds. The necessity of constant and warmer temperature and of abundant rains became more and more urgent; but unfortunately they tarried too long.

In early locations the plant, in consequence of the warm weather of July, displayed a great number of buds, which, however, blossomed too slowly in consequence of want of rain, and in the middle of July a late picking was to be expected. In later locations the plant developed more slowly, showed fine, but not too many, side sprigs and rather a large number of buds; hence the generally prevailing opinion was that, by the setting in of abundant rain showers in the beginning of this month, a crop equaling about that of last year would be secured. To this must be ascribed that at that time the general condition of the hop crop was reported as very favorable; but the tropical heat of the last ten days—36° to 41° Réaumur (112° to 125° F.) has caused a change. In light soils and less good gardens that unusually high temperature was of bad effect, as the appearance of rust was to be observed, and injurious effects and a reduction of the yield was caused. Hence, picking had to be forced in those districts, while in late locations it did not become general before the 20th of this month.

In regard to the quantity, the Saatz district has been less successful than last year. The plant, as mentioned before, was wanting in richly bearing fruit sprigs, and the tropical heat of the latter weeks causing great damage here and there. The crop can be estimated only as a weak half yield. If 6 to 7 cwts. are taken per hectare, this would make a yield of about 45,000 to 50,000 cwts. Of course, the weather of the next ten to fourteen days, that is, as

long as picking lasts, may not only preserve, but also promote, the yield, as cool weather and abundant rains will cause a more perfect development and so increase the yield.

In regard to the quality of this year's produce, only the best can be stated. The present temperature promotes the development and ripening of the rundle and increases the formation of lupulin, making the product rich in quality. Here and there the hops have suffered from hot winds and the abnormally high temperature of the last ten days, and in some places the color leaves much to be wished for.

AUSCHA DISTRICT.

[August 23, 1892.]

For many years the hop plant has not undergone so many changes as it has this year, as during the whole period of development hopes and fears were entertained by turns, and even to-day, when picking has already begun, it is difficult to give a judgment of the result.

The first period of the growth was not particularly favored by the dryness of the spring weather; the plant was not so vigorous and had not so many sprigs as it has in years of a rich yield. Complaints of vermin were heard, too, which did not cease until after the setting in of the longed-for and abundant thundershowers of July. The plant seemed refreshed and invigorated, the blight has disappeared, and hopes for a good, if not a rich, middling crop like last year's were justified and probably would have been fulfilled, too, if the tropical heat of the last week had not brought a new and very dangerous enemy to the much-tried plant, *i. e.*, copper rust, which is apt, as it has often done before, to lessen, if not wholly to destroy, the gladdest hopes of the hop-growers in the very last moment. As yet it has appeared mostly in the hill lands, but will seize the plains, too, if the drought continues any longer; and it is enforcing a hastened picking, which has commenced with the greatest efforts. To-day clouds are appearing, and, should they bring the longed-for rain, the damage may still be lessened; but the yield will fall short of last year's by at least one-fourth.

The same thing that has been said here of the Rothlande is to be said of Saatz, which has been visited by the same calamity; and from most of the other European hop-growing countries similar complaints are heard.

The stocks of 1891 have been used up by consumption, England and America included. The latter, in consequence of larger consumption and its crop of 1892 being estimated at 20,000 bales less, will have to dispose of a reduced quantity for export.

UPPER AUSTRIA.

[Rohrbach and the adjoinging places of the Mühlkreis (mill district)—August 20, 1892.]

In general the hop plant this year is not so well developed as it was last year. Retarded by the continued cold of May and June, hops have rarely attained the full pole height, nor have they any vigorous side sprigs. Still, the plant, until lately, seldom remained so free from vermin and diseases as it has done this year. But by the continued, extraordinary heat of the latter days this favorable state has been essentially changed for the worse, and in many gardens copper rust, honeydew, black rot, etc., have appeared.

Picking of early hops has already begun. There is a good quality, but a small yield. Late hops developed well during blossoming time, but the present heat is injurious to the formation of the umbels, which remain small and of poor appearance.

If rain does not set in within one or two days, cooling off the high temperature, the crop promising so well a few days ago will lose considerably both in regard to quantity and to quality. Already the yield is estimated at one-third less than that of last year.

GERMANY.

Germany has suffered in the same manner as Austria did from the heat of those latter days. The yield, which last week had been estimated at 500,000 cwts.—the same quantity as last year—has here, too, been reduced and will by no means reach the yield of last year's crop.

FRANCE AND BELGIUM.

France, and also Belgium, calculates on half a crop.

RUSSIA.

Russia, the produce of which was of no significance to the markets before last year, has suffered much from hail and diseases and will not reach by far last year's crop either in quality or in quantity.

ENGLAND.

As almost every year, so this year too, complaints of mold and vermin were heard from several parts of the large hop domain. A part of the yield will be discolored and unsound, while the good locations (east and middle Kent) will probably be satisfactory. The hop acreage has increased somewhat, and, provided the weather remains favorable, this year's crop is estimated at about 450,000 to 480,000 quarters, against 440,000 quarters last year. But it must be considered that gathering begins late in England, as late hops are only in blossom now.

UNITED STATES.

Of the Western States, Washington and Oregon suffered much from vermin and will have a smaller yield than last year; but the Eastern States and California have good prospects. The American yield of the crop will probably be correctly estimated at 90,000 bales for the West coast and at 120,000 to 130,000 bales (of about 90 kilograms) for the Eastern States.

It will not be amiss to assume that the weather calamities, as several times mentioned before, will cause a great difference in the qualities. As may be seen from the above, there is not too great a crop to be expected in regard to quantity. The stocks of 1891 are exhausted.

Demands will probably come at an early date, as the hot weather caused a larger consumption of beer.

SECOND GENERAL HOP-CROP REPORT.

[August 22, 1892.]

To the favorable weather, moderate frosts, abundant snow cover, and the timely spring rains is due that at the beginning of work in the hop gardens the plant was found to have wintered well, showing vigorous young shoots. Complaints of rotting plants were rare, and of damage done by vermin little was to be observed on the Continent. Until toward the end of May rather cool temperatures and, in some places, frosts prevailed, causing the growth to be retarded. With the end of May came summer weather, and as fructifying rains were not wanting, a great part of the gardens made up for time lost, becoming of nominal and sound appearance, while another part—especially light soil or old plants—remained weak in the vine. July brought much rain, but the average temperature was very low, so that from all sides complaints were heard that the side sprigs, which are the chief bearers of blossoms and rundles, did not develop so well as in other normal good years. Still, the condition of the plant, especially after the abundant rains of the beginning of August, was quite satisfactory at that time, and, in consideration of the great many buds, a good, though not a brilliant, crop might be expected. But about a week ago there set in a continued and so tropical a heat, lasting up to to-day, that at this moment it is doubtful whether the late hops, in spite of the abundant buds, will reach a normal development of the rundles; and it is to be feared that, if a change of weather, *i. e.*, much rain and warm nights, does not shortly set in, the gardens which have remained sound as yet, will fall a sacrifice to copper rust caused by the heat.

The early hop districts, especially Bohemia, Styria, a part of Würtemberg, and Baden, have mostly developed produce already ripe for picking, so that these areas will be injured less; and, according to the present condition of the plant, based on good information, the following estimation may be given.

Austria has every reason to be satisfied with its crop, as in Bohemia the Saatz hop-growing district will yield about 50,000 cwts.; the Auscha Rothlande and Grünlande, about 60,000 cwts.

(the crop of the Saatz district in 1891 amounted to 75,000 cwts.); Galicia calculates on about 15,000 cwts.; Styria, 7,000 cwts.; Upper Austria, 8,000 cwts.; and Moravia and the other crown lands, together with Hungary, are estimated at the total amount of about 10,000 cwts.

In Bavaria the quantity of this year's yield will not be less than last year's. The condition of the hill lands and the Spalt district is particularly fine. A larger yield is expected than last year's. Hollitau will have about the same crop as last year; but the Franconian districts and the Aichgrunde are of inferior standing and will have a considerable shortage. The total yield of Bavaria is estimated at 220,000 to 240,000 cwts.

In Würtemburg and Baden, in spite of a pretty satisfactory condition of the plants, the quantity of last year's crop will not be fully reached. The former country is estimated at about 60,000 cwts.; the latter at about 50,000 cwts. The Reichslande, too, will have a shortage, and will scarcely get more than 65,000 cwts. The Altmark had complained of the weak condition of the plants from the very beginning, while in Posen the plant had to suffer from dryness for some time, and complaints of copper rust are heard. The yield of these two provinces, together with the other hop-growing provinces of Prussia may be estimated at about 35,000 cwts.

France will have about the same quantity as in 1891, *i. e.*, about 500,000 cwts.; and Belgium, where the condition of plants is better, will harvest about 90,000 cwts.

Russia expects a little less than last year, as the plant does not stand particularly fine in Volhynia; but in Poland it is well developed. The crop is estimated at about 70,000 to 75,000 poods, *i. e.*, about 25,000 cwts.

In the state of the first vegetation the weather was essentially different in England from that on the Continent. While here rain was wanting in general, England at the beginning complained of too much wet, from which the plant was suffering. Of late, too, prospects were less favorable, so that while a few weeks ago the yield had been estimated at 7 to 9 quarters per acre, the estimate has now been reduced to 400,000 quarters.

JULIUS GOLDSCHMIDT,
Consul-General.

UNITED STATES CONSULATE-GENERAL,
Vienna, September 20, 1892.

AMERICANS IN LIVERPOOL.

REPORT BY CONSUL SHERMAN.

I regret that my replies to the questions relating to Americans residing in and passing through this district can not be complete. Such statistics, however, as are available I inclose in response to instruction.

The number of passengers can be obtained only from the records of the steamship companies, but they can do no more than estimate the percentage of Americans.

The number of Americans residing during the past year in the Liverpool consular district was twenty registered at the consulate and thirty estimated.

The average number of Americans resident per year during the past ten years in the Liverpool consular district is estimated at thirty.

The number of transient Americans arriving at and departing from the Liverpool consular district during the past year it is impossible to give with any degree of accuracy. There arrived at this port from the United States 25,043 saloon, 13,209 second cabin, and 49,057 steerage passengers during

the year 1891, and 26,416 saloon, 18,579 second cabin, and 143,675 steerage passengers departed for the United States.

Of these the steamship companies estimate that of the saloon passengers from 65 to 75 per cent, of the second cabin 10 per cent, and of the steerage not over 2 per cent were Americans.

Of the number of transient Americans arriving at and departing from the Liverpool consular district during the past ten years there are no statistics available without greater expense than I feel authorized to incur.

The approximate aggregate amount paid by the Bank of Liverpool (limited) under circular letters of credit to American travelers passing through Liverpool for the year ended April 30, 1892 (drafts and circular notes not included) was £31,000 ($155,000); by Baring Bros. & Co., £10,880 ($54,400); total, £41,880 ($209,400). The other Liverpool banks state that their payments have been unimportant.

THOMAS H. SHERMAN,
Consul.

UNITED STATES CONSULATE,
Liverpool, June 20, 1892.

HONGKONG STATISTICS.

REPORT BY CONSUL SIMONS.

HONGKONG A FREE PORT.

The difficulties attending the preparation of a report upon the commerce of Hongkong, in the absence of custom-house statistics or of any system of registration of the exports and imports of the colony, can be appreciated only after personal experience. Hongkong is a "free port"* in the fullest sense of the words, and every attempt to introduce such registration is strongly opposed by the merchants of all classes, who fear that such a step would lead to troublesome restrictions upon trade, and ultimately, perhaps, to the establishment of a custom-house and the levying of customs duties. So strong is this belief that when the present governor, Sir William Robinson, shortly after his arrival, proposed the enactment of an ordinance to make such registration compulsory, the Hongkong Chamber of Commerce, in view of the public importance of the question, brought it before the an-

*I am constantly receiving letters from American exporters inquiring the duty levied on various articles at Hongkong, and, in view of this circumstance, I believe that the fact that Hongkong is a free port can not be too strongly insisted upon, especially as I discovered in the commercial relations of the United States for 1887 some statements on this subject so misleading that they ought not to be left uncontradicted.

The writer says that the former duty on kerosene oil was 40 cents a case, but that lately a further likin tax of 80 cents a case has been levied, and that both taxes are collected at Hongkong, which has hitherto been a free port, but has now apparently become a customs station for the Chinese Government. Now, as a matter of fact, Hongkong has never ceased to be a free port, and the explanation of the kerosene tax is very simple. As I have stated in this report, the office of the Kowloon customs station is located in Hongkong, and, as all oil carried into the interior in junks has to pay duty at Kowloon, it naturally follows that the payments are actually made at Hongkong. This, however, has no connection with the colonial government, but is purely a matter of convenience to shippers.

nual general meeting of its members, held on May 5, 1892, when the following resolution was unanimously carried:

That the chamber of commerce is of opinion that the proposal to obtain returns of cargo from vessels coming in and going out of this harbor will, if adopted, prove detrimental to the interests of this colony; therefore, it recommends the Government to abandon the idea of enacting such a measure as law in this colony.

On the governor's expressing surprise at any opposition to so simple a proposal, having for its aim nothing beyond the recording of trade statistics, which in one form or another is carried out in almost every port of the British possessions, and requesting the chamber of commerce to state its reasons for such opposition, he was answered that—

Apart from its excellent and commodious harbor, Hongkong, when first occupied, was conspicuous chiefly by the disadvantages under which it labored as a seat of any extended commerce. Being an island of very limited area, producing nothing, and having no large territory immediately connected with it, the principle was clear from the first that only by judicious fostering, exceptional treatment, and absolute freedom as a port could such a place ever become an emporium of any description of trade.

As the most important part of such treatment it was recognized that not only must the colony be constituted a free port, in the ordinary acceptation of the term—exemption from customs duties—but this freedom must also include, so far as consistent with good order, an entire absence of restrictions in all matters connected with shipping, trade, and trading operations.

To its immunity from customs dues and the comparative absence of vexatious regulations the existence and growth of Hongkong as a colony are in a great measure due. * * * Indeed, it is rather a port of general influence and the protection of the general trade in the Chinese seas than a colony in the ordinary sense. The bulk of the business carried on here includes something different from mere buying and selling; it has been created by, and is dependent for its existence upon, the exceptional facilities afforded for the free and unimpeded handling of goods. Therefore, regulations which will hamper or in any way render this more troublesome and tedious are directly prejudicial to the main interests of the colony.

These observations apply with especial force to the Chinese, numbers of whom have been attracted to this colony by the promise and the belief that their trade would be free from troublesome restrictions, and who can with greater facility than Europeans transfer their business to the adjacent Chinese territory or to neighboring ports if they think that vexatious legislation is likely to be adopted in this port.

It will be apparent that with such opposition it is not likely that registration will make much progress for some years to come.

Not only, therefore, are the data lacking from which to compile an accurate commercial report, but even the movement of merchandise to the different ports from Hongkong, the trade center of the East, can be only approximately determined, while the sources of origin of the various articles as affecting the different countries remain unknown, except, perhaps, as they appear in the private ledgers of the different mercantile houses.

EXPORTS TO THE UNITED STATES.

While, therefore, it would be both interesting and desirable to make a critical comparison between the United States and other countries as regards their trade with Hongkong for a series of years, that is manifestly impracti-

cable, and it is evident that the only absolutely accurate commercial information which I can supply is confined to the exports from Hongkong to the United States, as obtainable from the invoices on file in this consulate.

The following statement, compiled from the record of invoices of goods exported to the United States from Hongkong, shows the total value of each article for the years 1889 and 1891 and the increase or the decrease in the latter year. I have selected 1889 rather than 1890 for purposes of comparison with 1891, in order to show as far as possible what effect, if any, the present tariff has had on the importation of each article into the United States:

Table showing the value of declared exports from Hongkong to the United States for the years 1889 and 1891.

Articles.	1889.	1891.	Increase.	Decrease.
Camphor-wood trunks	$1,353	$370	.....	$983
Cassia	82,509	87,538	$5,029	.....
China ware	3,407	4,767	1,360	.....
Clothing	202,951	207,317	3,366	.....
Coffee	1,145	3,322	2,177	.....
Curios	2,055	4,576	2,521	.....
Fans	13,250	7,507	.....	5,743
Firecrackers	156,411	16,240	.....	140,171
Fish nets	4,333	2,563	.....	1,770
Hair, human	520	.....	.....	520
Hats	2,494	3,693	1,199	.....
Matting	372,216	101,046	.....	231,170
Medicine	59,042	53,490	.....	5,552
Nutmeg	4,411	2,112	.....	2,299
Oil	251,792	264,613	12,821	.....
Opium:				
Crude	.....	5,700	5,700	.....
Prepared	120,463	541,565	421,102	.....
Persian	29,813	.....	.....	29,813
Paper	11,735	12,357	622	.....
Pepper	10,889	5,278	.....	5,611
Personal effects	8,050	127	.....	7,923
Preserves	3,231	5,349	2,118	.....
Provisions	406,057	428,742	22,685	.....
Quicksilver	5,824	66,031	60,207	.....
Flasks	2,267	2,139	.....	128
Rattan	31,097	23,075	.....	8,022
Rice	830,028	891,123	61,095	.....
Rope	190	.....	.....	190
Sago	1,104	.....	.....	1,104
Shoes	59,285	58,442	.....	843
Silk	1,164,490	.....	.....	1,164,490
Goods	150,620	69,397	.....	81,223
Sugar	9,089	413,648	404,559	.....
Sundries	162,403	139,581	.....	22,822
Tapioca flour	49,015	31,945	.....	17,070
Tea	100,725	127,076	26,351	.....
Timber	3,021	.....	.....	3,021
Tin	50	.....	.....	50
Tobacco	35,280	47,770	12,490	.....
Wine	22,235	22,605	380	.....
Total	4,374,840	3,691,104	1,046,782	1,730,518

In the case of refined sugar the effect of the reduction of duty is distinctly seen in the increase from $9,089 in 1889 to $413,648 in 1891, and, since the largest refinery contemplates enlarging its capacity so as to increase its output 2,000 piculs (133 tons) a day, there in every prospect that in the near future the figures will show a still larger increase. Prepared opium is the only other article which shows a very large increase, notwithstanding the increased duty, while the increased exportations of quicksilver, rice, and tea have apparently little or no connection with the tariff. On the other hand, the total disappearance of raw silk from the records and the great decrease in firecrackers, silk goods, and matting are only to be accounted for by the supposition that the trade in these articles has been wholly or largely directed to Canton, although in the case of matting the growing popularity and increased importation of the thick, soft Japanese matting may have had some effect in reducing the export of the Chinese article to the United States.

Statistics as to the share taken by each flag in the export trade from Hongkong to the United States in the years 1889 and 1891 may prove interesting.

Table showing the value of the exports from Hongkong to the United States by each flag in 1889 and 1891.

Flag.	1891.	1889.
American	$40,966	$65,533
English	453,243	122,505
German	271,529	1,739,104
Portuguese	531,710	104,382
Chinese	2,393,092	2,333,637
Other European	564	9,679
Total	3,691,104	4,374,840

It should be observed that the large increase in the English exports in 1891 is almost solely due to the one article of refined sugar, while the increase in the Portuguese figures is also owing chiefly to one article—prepared opium. The share taken by American vessels in the total carrying trade from Hongkong to other countries in 1891 amounted to only 26.7 per cent of the total, viz:

Shipped in American bottoms	$989,008
Shipped in foreign bottoms	2,702,096
Total	3,691,104

The returns of the Chinese customs station at Kowloon (whose office is located in Hongkong) give some idea of the passage of merchandise through the latter port, but it must always be remembered that there are two other routes between Hongkong and the interior of China, viz, by way of Canton and Lappa, respectively; and, since trade will naturally seek the channel least obstructed by taxation at the time, it follows that the increase and decrease, or even the total disappearance, of a particular article from the

Kowloon returns for any given year is no indication of the actual quantity of that article passing through Hongkong. For instance, up to last year the bulk of the rice and paddy required to supply the needs of the Quang-Tong province, and which amounts to nearly 25 per cent of the whole trade of Kowloon, came from Cochin China and Siam and was all landed or transshipped at Hongkong into junks in which it was carried into the interior by way of Kowloon; but in 1891, the Siamese rice crop being short, the deficiency was supplied by Chinese rice from the Yangtse Valley, all of which was sent into the interior in steamers by way of Canton, causing a decline in the Kowloon figures of over 2,500,000 piculs, valued at 4,000,000 taels. Again, there was a falling off in kerosene in 1891 at Kowloon of over 500,000 taels, although the total kerosene trade of southern China for 1891 was 9,226,000 gallons, or an increase over 1890 of nearly 2,500,000 gallons. This was in consequence of the action of the Chinese provincial authorities imposing upon kerosene carried in native junks the heavy "battery tax" of 40 cents a case, thus driving the kerosene trade from junks (passing through Kowloon) to river steamers entering by way of Canton, which pay no battery tax, being under the protection of foreign flags. This result of their action alarmed the Chinese authorities, and they subsequently reduced the battery tax on junk-borne oil to 20 cents a case and endeavored to make an illegal discrimination in favor of the junks in the case of oil sent into the interior by foreign merchants under transit passes, an action which was the subject of determined remonstrance on the part of the foreign merchants and led to an extended correspondence between the Hongkong Chamber of Commerce and the British minister at Peking; and this proving unavailing, the chamber laid its grievances before the home secretary.

The outward carriage of tea, on the other hand, was diverted in 1891 from the river steamers to the junks by an action on the part of the Chinese authorities similar in kind, but opposite in effect to that which drove kerosene from the junks to the steamers, and consequently the tea trade of Kowloon increased out of all proportion to the total increase of the whole of southern China, being accompanied by a corresponding decrease at Canton.

Nor is the revenue collected at Kowloon a fair indication of the total volume of the trade, since more than 60 per cent of all the imports or exports go or come by way of Canton, paying duty at that port and passing Kowloon free, while exports pay half their likin at the port of shipment.

Again, opium shows in the Kowloon statistics a decrease of over 150,000 taels in 1891 from the figures of 1890, but this is more than compensated for by increased importations by steamer via Canton.

The following table forcibly illustrates what has been said concerning rice, kerosene, and opium, notably the two former:

Articles.	1888.	1889.	1890.	1891.
Rice and paddy:				
To Canton by steamer.....piculs...	1,431,277	1,827,137	1,549,223	4,400,586
Through Kowloon by junk.....do.....	618,004	1,975,373	7,045,701	4,459,734
Through Lappa by junk.....do.....	63,074	85,172	118,818	151,752
Total.....do.....	2,112,355	3,887,682	8,713,742	9,012,072
Kerosene oil:				
Through Kowloon by junk.....gallons...	2,912,115	4,511,180	6,814,449	4,636,383
By steamer to Canton.....do.....	8,456	48,062	25,790	4,639,971
Total.....do.....	2,920,571	4,559,242	6,840,239	9,276,354
Opium:				
At Canton.....piculs...	13,115	12,270	11,812	12,788
At Kowloon.....do.....	2,851	2,453	1,810	1,447
At Lappa.....do.....	1,811	1,962	2,090	1,881
Total.....do.....	17,777	16,685	15,712	16,116

The total value of the goods exported from Kowloon to Hongkong in 1891 was 17,016,926 taels, as against 14,840,669 taels in 1890, or an increase of over 2,000,000 taels. As already explained, half of this increase is due to the change in the carriage of tea by junks, instead of by steamers as heretofore.

That there has been a real increase in the export of tea, however, and not merely a nominal increase at the expense of Canton is proved by the fact that, while the falling off in the export of tea by steamers at Canton was less than 38,000 piculs, the increase of the export of tea by junks from Kowloon was over 57,000 piculs, representing an actual independent increase of nearly 20,000 piculs, valued at about 370,000 taels.

The export of raw silk was 4,424 piculs, valued at a little over 1,460,000 taels, an increase over 1890 of more than 25 per cent. This is largely due to the erection of steam looms at Macao in 1891, which consume a large amount of raw material. About 50 per cent of the total exports came from Canton; about 13 per cent from Chautsan, south of Canton; about 5½ per cent from Swatow; about 3½ per cent from Taiping, in the Tungkin districts; about 4 per cent from Konginumu, west of Macao; 2½ per cent from Hoion; 2½ per cent each from Kowhong, Shiklung, and Sanon; and the remaining 12 per cent from sixty-two other places.

As shown in the preceding table, the total importation of opium in 1891 was only 1,447 piculs, a falling off of 20 per cent from the figures of 1890. But, as previously explained, this is chiefly due to the increased importations by way of Canton in the river steamers, largely owing to the discontinuance of the privilege formerly granted to junks of being towed by steam launches and the consequent increased risk of the carriage by junks.

The diminution in the importation of opium through Kowloon can not be attributed to any increase in smuggling in 1891 as compared with 1890.

On the contrary, the Kowloon authorities declare that there was less smuggling in 1891 than in any previous year, though it doubtless still exists to some extent. Almost all the opium smuggling on a large scale is done in small boats, which leave the harbor at night. This has been to some extent remedied by a new ordinance, passed in Hongkong toward the end of 1891, one clause of which forbids the departure of junks at night from the waters of the colony except by special permission.

Patna opium formed 77 per cent of the total Kowloon importations and Malwa about 15 per cent.

The Kowloon returns, however, as before explained, are insufficient of themselves to give any idea of the trade of Hongkong. They must be taken in conjunction with those of Lappa and Canton. The United States consul at Canton has doubtless supplied the latter, and those of Lappa will be found in the "Report and Returns of Trade" of the Chinese imperial maritime customs of 1891, published by the Chinese Government; but a few words of comment on the Lappa report will not be out of place.

The junk trade of Lappa, like that of Kowloon, suffered heavily from the battery tax (*ching-fei*), a duty levied on all goods carried in Chinese bottoms for the purpose of erecting fortifications and purchasing guns for coast and harbor defense, a tax which in Lappa, as in Kowloon, has had the effect of diverting trade to Canton by river steamers. The imports of kerosene via Lappa fell from over 311,000 gallons in 1890 to 240,339 gallons in 1891, a decline of 71,000 gallons from this cause alone.

The value of exports abroad from Macao in 1891 was 1,918,915 Hongkong taels, chiefly due to black and green tea and raw white silk, the latter going chiefly to feed the steam looms of Macao. With regard to tea, the Lappa commissioner observes that while the total quantity exported is almost the same as in 1890, the export for 1891 consisted almost entirely of black tea, green having nearly disappeared from the records. The export of cassia oil rose from 497 piculs in 1890 to 783 piculs in 1891. Groundnut oil, on the contrary, shows a decrease of 10,000 piculs, valued at 52,000 Hongkong taels, the decline being attributed by the commissioner to the lessened demand for it in the United States and Australia caused by the diminished number of Chinese emigrants to those countries under the present restriction acts. This observation is not borne out by the statistics of the Hongkong exports of oil to the United States, which show an increase of $12,821 in 1891 over the figures for 1890.

The decrease in the opium export of Lappa shown in the foregoing table is attributed by the commissioner not to any increased use of the native drug, but chiefly to the quantity of Smyrna opium shipped direct from Singapore, landed at out-of-the-way places, paying no duty or likin, and smuggled from Macao in quantities estimated by the native authorities at from 40 to 60 chests a month. He finds in this Singapore-shipped opium the explanation of the decline in the Kowloon opium statistics, contrary to the opinion of the Kowloon commissioner, who, we have seen, ascribes it solely to increased shipments via Canton.

SHIPPING.

The shipping returns show an advance in the trade of the colony, the total tonnage of arrivals and departures amounting to 14,000,000 tons, the highest figures yet reached and over 250,000 tons more than in 1890. There were 33,080 arrivals, with a tonnage of 7,001,829 tons, and 32,960 departures, of 7,003,869 tons, making a grand total of 66,040 vessels and 14,005,698 tons.

The increase in European-constructed vessels numbers 488, of 507,302 tons, against a decrease in the foreign junk trade of 1,283 vessels, measuring 308,961 tons, and an increase in the local junk trade, *i. e.*, ports of the colony, of 2,848 vessels, aggregating 131,064 tons, or a net increase in junks of 177,897 tons. The net increase of the trade of the port was 2,053 vessels, measuring 329,405 tons.

The following statement shows how this amount of shipping is apportioned:

Description.	1890.		1891.		Increase.		Decrease.	
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
British	5,524	6,994,919	5,719	7,190,589	195	195,670	.....	.....
Foreign	2,695	2,776,822	2,988	3,088,454	293	311,632	.....	.....
Junks in foreign trade	46,686	3,572,079	45,403	3,263 118	.....	.....	1,283	308,961
Total	54,905	13,343,820	54,110	13,542,161	488	507,302	1,283	308,961
Junks in local trade	9,082	332,473	11,930	463,537	2,848	131,064	.....	.....
Grand total	63,987	13,676,293	66,040	14,005,698	3,336	638,366	1,283	308,961

Compared with 1890, there has been an increase of British tonnage amounting to 195,670 tons and an increase of foreign tonnage of 311,632 tons. A comparison with the average of the last three years shows an increase in 1891 of 433 British ships, representing 533,878 tons, and of vessels under foreign flags an increase of 478 ships, measuring 495,028 tons.

FORESTS.

There are as yet no forests, properly speaking, although the afforestation of the island is one of the leading public works, and the young plantations are thriving well and already add greatly to the beauty and health of the colony.

MINES AND QUARRIES.

There are no mines in actual operation in the colony, although there have been rumors of the discovery of galena, copper, and tin in the island and British Kowloon, but apparently not of sufficient richness to tempt capital into the attempt to develop them.

There are one hundred and three granite quarries, which produced $18,200 worth of stone in 1891.

EMIGRATION AND IMMIGRATION.

The returns for Chinese emigrants and immigrants are shown in the following table, taken from the harbor master's report:

EMIGRANTS.

To—	Adults.		Children.		Total.
	Males.	Females.	Males.	Females.	
Honolulu, Sandwich Islands	1,172	191	150	55	1,568
Mauritius	647	5	17	3	672
Portland, Oregon	34	.....	.....	1	35
San Francisco	2,678	141	12	27	2,855
Straits Settlements	31,396	4,385	650	550	37,021
Vancouver Island, British Columbia	1,970	.....	.....	.....	1,970
Victoria	1,038	.....	.....	.....	1,038
Total	38,938	4,722	869	636	45,162

IMMIGRANTS.

From—	Adults.		Children.		Total.
	Males.	Females.	Males.	Females.	
Adelaide, South Australia	18	.....	.....	.....	18
Bangkok, Siam	5,680	.....	.....	.....	5,680
Brisbane, Queensland	117	.....	.....	.....	117
Cairns, Queensland	23	.....	.....	.....	23
Callao, Peru	279	.....	.....	.....	279
Cooktown, Queensland	65	.....	.....	.....	65
Dilly, Timor	64	3	9	4	80
Honolulu, Sandwich Islands	625	4	.....	.....	629
Mauritius	140	.....	.....	.....	140
Medan, Sumatra	979	.....	.....	.....	979
Melbourne, Australia	613	3	5	.....	621
Newcastle, Australia	40	.....	.....	.....	40
New Zealand	148	.....	.....	.....	148
Port Darwin, South Australia	162	.....	1	.....	163
Portland, Oregon	97	4	1	1	103
Rockhampton, Queensland	31	.....	.....	.....	31
San Francisco	9,102	160	97	52	9,391
Straits Settlements	79,818	2,501	902	566	83,787
Sydney, Australia	722	.....	2	1	725
Thursday Island, Australia	20	.....	.....	.....	20
Townsville, Queensland	189	.....	.....	.....	189
Vancouver, British Columbia	1,894	14	7	6	1,921
Victoria, British Columbia	50	.....	.....	.....	50
Total	100,876	2,689	1,004	630	105,199

The amount of treasure brought by immigrants from San Francisco was $5,929,904 and from Australian ports $1,505,886.

It will be seen that the total number of Chinese emigrants to other countries last year was less than half the number who returned to China during the same period. The whole number of Chinese who entered the various North American ports was only 51.4 per cent of the number who returned to

China from the same ports, while the exodus of Chinese from San Francisco alone in 1891 was nearly double the entire Chinese immigration into all the North American ports and more than three times as great as the influx of Chinese into San Francisco itself.

The amount of treasure brought back to China by those returning from American ports is not given except for San Francisco; but it is probably fair to assume that the total amount bears about the same ratio to the total number of passengers as in the case of that city, on which assumption the total amount of treasure carried out of North America by returning Chinese in 1891 would be something like $7,250,000.

MANUFACTURES.

These are numerous, but, as will be seen from the subjoined list, most of them are, from their nature, conducted on a small scale, but little capital being required. The chief exceptions are the sugar refineries and the Hongkong Rope Manufacturing Company (limited), whose plant, imported throughout from New York, is said to be one of the most costly and complete in the world. The list shows a slight increase in the number of manufactories in almost every department over that in 1890. The number of manufacturing establishments was as follows:

Description.	Number.	Description.	Number.
Aërated water	10	Lanterns	24
Artemisia oil	2	Leather boxes	11
Artificial flowers	1	Oars	28
Bakeries	15	Opium (prepared)	3
Bamboo ware	50	Paper boxes	5
Boats	60	Rattan ware	64
Carvings	19	Rope and sails	28
Cigars	2	Sandalwood ware	8
Copper ware	52	Sapan-wood ware	7
Gold leaf	17	Silk handkerchiefs	1
Gold and silver ware	58	Soap	2
Distilleries	5	Spectacles	1
Dyehouses	10	Soy	23
Furnaces	1	Sugar refineries	3
Furniture	55	Tanneries	6
Ginger (preserved)	6	Tinware	12
Images	26	Tobacco	17
Incense sticks	10	Tooth powder	1
Ironware	52	Umbrellas	23
Iron foundries	2	Vermilion	7

POPULATION.

The estimated population on the 31st of December, 1890, was 198,742, which is 4,260 more than the estimated population at the end of 1889.

A census taken in May, 1891, gives the total number of inhabitants of the island of Hongkong and British Kowloon as 221,441, of whom 210,995 were Chinese, 1,901 colored, and 8,545 white. There were 157,585 males and 63,856 females.

The following is the mean estimated population for the last nine years:

Years.	Males.	Females.	Total.
1883	124,768	48,707	173,475
1884	130,560	50,969	181,529
1885	137,079	53,515	190,594
1886	144,550	56,440	200,990
1887	152,427	60,524	212,951
1888	154,500	61,300	215,800
1889	138,033	56,449	194,482
1890	.....	.....	198,742
1891	159,969	64,845	224,814

Of the Chinese, 17,215 live in boats, having no other residence (literally a floating population). There were 205 births during the year in the British and foreign community and 1,529 among the Chinese, making a total of 1,734.

Of deaths, there were 191 in the British and foreign community, 51 of which were nonresidents, and 5,183 among the Chinese, or a total of 5,374.

The birth rate per 1,000 for the year among the British and foreign community was 19.53; the death rate per 1,000, 18.2. Among the Chinese the birth rate per 1,000 for the year was 7.13 and the death rate 24.18. This makes the birth rate for the whole population 7.71 per 1,000 and the death rate 23.9 per 1,000.

AGRICULTURE.

This is and will always continue to be of small importance. The rocky, mountainous nature of the island and its dependencies limits the amount of arable land to small garden patches, in which only vegetables for home consumption can be raised.

FISHERIES.

There is no means of ascertaining the nature and value of the yearly products of the fisheries; but these waters abound with excellent food fish, and it is estimated that there are at least three thousand distinct varieties of "sea food" exposed for sale in the Chinese markets during the year.

PENSIONS.

The number of persons enjoying pensions payable from the revenues of the colony in 1891 was 289, to whom were paid sums ranging from $24 (in the case of Sikh policemen) to $3,000 (in that of a retired colonial secretary and auditor-general), amounting in the aggregate to $50,056.81.

WAGES.

The average rate of wages for labor is as follows: Domestic servants (employed by Chinese), from $12 to $36 per annum, with board and lodging; Chinese (employed by foreigners), from $48 to $144 per annum, usually with lodging; Chinese workmen, from $60 and upwards, with board and

lodging; blacksmiths and fitters, from 40 cents to $1.25 per day; carpenters and joiners, from 30 to 40 cents per day; masons and bricklayers, from 30 to 50 cents per day; laborers, from 18 to 30 cents per day.

REVENUE AND EXPENDITURE.

The revenue amounted to $2,025,302.51, or, excluding premiums from land sales and water account, $1,907,054.43. The expenditure amounted to $2,449,086.26, including extraordinary works; excluding these, $1,868,073.26. The revenue has been classified in conformity with the instructions of the secretary of state for the colonies.

The revenue and expenditure for the past five years have been:

Year.	Revenue.	Premium from land.	Expenditures.		Water account.	
			Ordinary.	Extraordinary, including defensive works.	Receipts.	Expenditures.
1887	$1,427,485.79	$155,238.02	$1,278,181.68	$744,820.38	.....	.....
1888	1,557,300.03	160,688.64	1,461,459.64	530,870.03	.....	.....
1889	1,823,549.13	154,725.60	1,459,167.16	374,551.63	.....	.....
1890	1,995,220.47	16,638.80	1,517,843.05	397,507.42	.....	.....
1891	1,907,054.43	51,761.47	1,868,073.26	514,526.39	$66,486.61	$66,486.61

The military expenditure (inclusive of the volunteer corps) defrayed by the colony during the last seven years has been as follows:

Year.	Military contributions.*	Defensive works.
1885	$117,337.00	$68,153.45
1886	124,561.68	217,901.45
1887	128,815.63	258,444.28
1888	134,594.68	62,115.90
1889	134,261.12	63,753.73
1890	124,646.96	5,082.92
1891	†421,002.01	20,005.45

* Exclusive of defensive works and inclusive of volunteer corps.

† The military contribution was doubled from January 1, 1890, and the arrears for 1890 were paid in 1891.

PUBLIC DEBT.

This amounts to £200,000, and was incurred for fortifications, sanitary works, etc.

MONEY AND COINAGE.

The currency in use in the colony consists of the following coins:

(1) The silver dollar of Mexico.

(2) The Hongkong dollar and half dollar, issued by Her Majesty's mint.

(3) Silver coins issued from Her Majesty's mint representing one-fifth part of the said dollar, commonly called "20-cent piece;" one-tenth part of said dollar, commonly called "10-cent piece;" one-twentieth part of said dollar, commonly called "5-cent piece."

(4) Copper or bronze coins, also issued from Her Majesty's mint, representing one-hundredth part of said dollar, commonly called "1-cent piece;" one-thousandth part of said dollar, commonly called "mill" or "cash."

The approximate amount of Hongkong silver and copper and subsidiary coins (20, 10, and 5 cent pieces and 1-cent and 1-mill pieces) put in circulation up to December 31, 1891, was $72,612,500. On May 25, 1890, however, a Chinese mint was opened at Canton for the coinage of "bronze or copper cash," and on the 22d of May, 1890, it commenced making silver coins. From that date to December 31, 1891, the output was as follows: Dollars, 43,933; half dollars, 17,847; 20-cent pieces, 5,667,381; 10-cent pieces, 16,098,579; 5-cent pieces, 1,158,945. From January 1 to May 14, 1892, the output was as follows: Twenty-cent pieces, 2,250,000; 10-cent pieces, 4,450,000; 5-cent pieces, 100,000. The average output of cash per day up to February, 1892, was 400,000. Since February about 500,000 cash per day have been made.

The nominal weight and fineness of the Canton coins are as follows: Dollars, 416 grains, 900 fine; half dollars, 860 fine; 20-cent pieces, 820 fine; 10-cent pieces, 820 fine; 5-cent pieces, 820 fine; cash, 60 per cent copper with 40 per cent of zinc or spelter. Tested at the mint in England it was found that the fineness of all the coins was far below the nominal standard; thus the dollar was 884.2 fine; the half dollar, 848.2 fine; the 20-cent pieces, 807.3 fine; the 10-cent pieces, 808 fine; 5-cent pieces, 811.1 fine.

The dollars weighed in England were found to be fully half a grain lighter than they were said to be. This year, I am told, the dollars are a trifle over the standard weight. In 1891 the Hongkong mint put into circulation subsidiary coins to the nominal value of $1,500,000, and made a profit of some $70,000. While this year the Canton coins have been sold at a discount, the monthly issue of the Hongkong mint has fallen to about $5,000 to $10,000. The colony has been flooded with the Canton coins, which are sold to bankers and compradors on issue from the mint at a discount; and the demand for Hongkong coins has decreased, in consequence, to such an extent that the colonial revenue from this source will probably not exceed $10,000 this year. Probably not more than 20 per cent of the whole output of the Hongkong mint is now in circulation.

EXCHANGE.

The fluctuations during 1891 in the value of the Mexican dollar, the currency of the East, while not so great as during the year 1890, have still been sufficient to greatly hamper most business calculations, introducing, as must be apparent, an element of uncertainty whose disastrous effects upon commerce, and (though to a less degree) upon private credit also, it is impossible to estimate. It is not so much the amount as the rapidity of the variation which has been found so trying to merchants and brokers.

Could the value of the circulating medium be fixed, even at so low a rate as that prevailing to-day—June 22 (70½)—it would be a boon to the commercial interests of the East.

THE KEROSENE TANK STEAMER.

An innovation in the kerosene oil trade of the colony which is exciting considerable interest and some anxiety among masters of American sailing ships is the threatened introduction of the tank steamer, designed for carrying Russian oil in bulk by way of the Suez Canal. The first of this intended line of steamers, the *Murex*, has just been launched in England, but it is as yet uncertain whether the Hongkong merchants will be allowed to store the oil in bulk on their premises or not; and even if this privilege is granted, it is still an open question whether the extra dues and precautions which will be insisted on in the passage of the canal, together with the expense of importing the tins and making the cases at this end of the route, will not more than compensate for the saving in freight, although it is believed that the Chinese may render this unnecessary by providing their own receptacles for the oil when bringing it from the godowns. If, however, the experiment proves a success, it would mean the almost total disappearance of American sailing ships from these waters, for they bring literally nothing but oil at present.

It is not known here what steps, if any, the American oil companies have taken or are contemplating to avert the threatened loss of its eastern trade. But, inasmuch as they have on all occasions hitherto displayed conspicuous ability in taking care of their interests, it is presumed that they will not be found wanting in this instance.

COAL IMPORTS.

The importation of coal into Hongkong for the nine years ended with 1891 presents interesting features. Previous to 1885, as will be seen by the table herewith, the supply came from places other than Japan, and in the main from England. In 1885 the first shipment began from Japan, and that country now furnishes the bulk of the supply. It is believed by those well informed upon the subject that, were mining permitted by the Chinese Government, the total supply of coal for Hongkong could be produced within 125 miles of that market and within three years from the beginning of operations.

Not only is all the coal used in Hongkong produced outside of China, but it constitutes of itself an important import into that country, more than 15,000 tons having been sent from Hongkong to Canton and Lappa during the year 1891; while a glance at the tables showing the imports into China (published by the imperial maritime customs), shows a like condition at most other customs stations.

Possessing an unlimited supply of coal within reach of water transportation, which has so far been scarcely touched, it seems incomprehensible that China should not only import that necessity but neglect such a market as has been built up almost within sight of the hills rich in this undisturbed wealth.

A consideration of the causes of her inaction, or rather active opposition to the development of her mines, would be out of place in such a report as this.

Table showing imports of coals into Hongkong during the last nine years.

Description.	1883.	1884.	1885.	1886.	1887.
	Tons.	*Tons.*	*Tons.*	*Tons.*	*Tons.*
Total Japanese	.....	.....	181,155	223,181	272,947
Other countries :					
England	.....	.....	.....	66,154	30,432
Australia	.....	.....	.....	89,053	61,450
New Zealand	.....	.....	.....	.....	2,500
Keeling Islands	.....	.....	.....	250	450
Anam	.....	.....	.....	800	.....
Canada	.....	.....	.....	60	3,243
Total foreign	265,006	309,269	184,984	156,317	98,075
Grand total	265,006	309,269	366,139	379,498	371,002

Description.	1888.	1889.	1890.	1891.
Japan :	*Tons.*	*Tons.*	*Tons.*	*Tons.*
Müke	106,605	137,380	141,274	179,776
Nagasaki	147,636	97,484	153,618	134,520
Kobé	43,797	84,187	41,960	10,000
Karatsu	.....	.....	.....	10,080
Otaru	.....	.....	6,000	15,900
Yacyama	1,304	5,957	.....	.....
Moji	.....	.....	60,236	57,446
Total Japanese	299,387	324,999	403,088	407,722
Other countries :				
England	19,830	27,770	16,811	28,140
Australia	26,941	63,858	29,002	31,317
New Zealand	1,500	3,000	200	.....
Keeling Islands	1,177	4,700	2,400	1,850
Kaiping	.....	.....	.....	9,400
Tonquin	.....	.....	350	3,300
Anam	.....	.....	.....	100
Canada	.....	1,000	450	2,220
Total foreign	49,448	100,328	49,213	76,327
Grand total	348,835	425,327	452,301	484,049

The percentage of Japanese coal to the total import was as follows:

Year.	Per cent.	Year.	Per cent.
1885	49.5	1889	76.4
1886	58.8	1890	89.1
1887	73.6	1891	84.2
1888	85.8		

AMERICAN PRODUCTS IN CHINA.

As a future market for American and European products China, with its population of 400,000,000, offers prospects unparalleled by any country not at present fully opened to the markets of the world. If we desire to secure our proportionate share of this market, however, our merchants must study more carefully than they have hitherto done both the national characteristics of the Chinese and the precise nature of their requirements. The first may be briefly summarized as follows: Intense conservatism, a stolid disregard of personal comfort (according to our ideas), strangely combined in the wealthier classes with lavish expenditure and great love of display in their domestic life; and in business matters an extreme caution, amounting at times to utter indifference as to the adoption of modern ideas or inventions. These peculiarities are well exemplified in the Chinese inhabitants of our American cities, who, after years of contact with their white neighbors, still cling to their hard, uncomfortable chairs and couches, never even substituting the feather or hair pillow for their neck-breaking wooden article, while they imported from Hongkong alone last year over $400,000 worth of Chinese food products and $53,000 of Chinese medicines.

The second point to be considered by the American merchant in the endeavor to open a Chinese market for his products is, as I have said, the precise nature of the requirements of the people. For example, in a country where there practically are no wheeled vehicles and everything is transported on the shoulders of barefooted coolies there is naturally little need of paved or macadamized roads, and it is consequently absurd to think of introducing expensive American road-making machinery—rock crushers, ponderous steam rollers, and the like. Yet I am constantly receiving letters from American manufacturers asking my assistance in introducing these and other machinery, such as saw and planing mills, mowing and thrashing machines, and harvesters, all equally absurd in their inadaptability to the requirements of a country where there are no large farms or plantations and where human labor is so cheap as to be a drug in the market.

For certain of our products, on the other hand, such as flour, kerosene oil, lamps, clocks, watches, knit goods, umbrellas, etc., there is already a large and steadily increasing demand; while I am convinced that many of our mechanical inventions, such as small gas engines, foot lathes, printing presses, and especially American hand tools and hardware of every description, would find a ready sale if the Chinese were once convinced of their utility and economy. This can never be accomplished, however, by the policy hitherto followed by most American manufacturers, of flooding the country with descriptive trade circulars and illustrated catalogues.

The one thing needful above all others to convert the splendid possibilities of the future into a remunerative certainty is personal introduction of our wares and patient explanation of their advantages by intelligent agents, and the custom once secured can only be retained by absolute integrity and fair dealing on the part of the American merchant, as the Chinese are shrewd

traders, and their confidence in an individual dealer, once shaken, can never be regained.

AMERICAN FLOUR IN HONGKONG.

It is estimated by one of the largest flour importers in Hongkong that the quantity of flour imported from San Francisco in 1891 amounted to 1,300,000 quarter sacks, which, with 500,000 from Portland, Oregon, and about 50,000 from Vancouver, make a total of 1,850,000 quarter sacks, the largest figures yet reached, each quarter sack containing 49 pounds of flour. It is sold in Hongkong for an average price of $1.30 in Mexican money, or nearly $1 in gold.

CONCLUDING REMARKS.

I regret to say that great depression prevails in all branches of business. Failures have been numerous, and that condition known all over the world as "lack of confidence" is widely felt. Stocks of all kinds, even those paying the normal dividends, have fallen enormously, while the number of companies in process of liquidation is a clear indication of the absence of that atmosphere of general prosperity so essential to the success of speculative enterprises.

Two causes are assigned for this undesirable state of affairs: First, the launching of "bubble companies" during the last few years, which, it is claimed, has drained the colony of many millions of dollars; and, second, the ever-recurring question of exchange. Merchants who purchased goods at a time when the Mexican dollar was worth 85 or 90 cents in gold must now either dispose of them at a loss or advance their prices, and the latter course is always followed by a contraction in the amount of sales.

It is generally believed, indeed, that the "legitimate" business of the colony has not greatly suffered, while the shipping on which its very existence depends shows, as we have seen, a healthy increase. But the fact remains, nevertheless, that universal dullness prevails, money is "tight," and credit contracted, and there are no reliable indications of a speedy improvement.

O. H. SIMONS,
Consul.

UNITED STATES CONSULATE,
Hongkong, July 6, 1892.

SPANISH ESPARTO GRASS.

REPORT BY CONSUL NEWSON, OF MALAGA.

The esparto grass of Spain is of a natural and luxuriant growth, found in the valleys and on the table-lands, especially in the provinces of Almeria, Murcia, Granada, Alicante, and at other points in the south of Spain. It is round and wiry, very strong, grows about 2½ feet high, and yields abundantly two crops per year. It is not cut, but is pulled, and the ground is

burned over every ten years. It is gathered in July and August, grows spontaneously, and needs no irrigation. The total production per year is from 70,000 to 80,000 tons, of which 60,000 tons is shipped to Scotland and England for the manufacture of paper, and the balance of the crop is retained for home consumption, for the manufacture of very strong ropes, baskets, matting, sandals, etc.

Formerly it ran to waste or was used only as fuel, but now it has become an important article of exportation; and land that was considered only a few years ago almost valueless is now worth many thousands of dollars, as the yield of this article affords splendid incomes. The product is almost the identical article we call wire grass in the United States. If some enterprising man in the United States would commence its cultivation, its utility in the manufacture of ropes, matting, and especially paper would make him rich. It needs no care; it grows while man sleeps; it says, "come and take me;" and, through the genius of intellect, many valuable articles are made from it. I have seen and examined very fine matting for floors made from it, very strong baskets, and ropes as great in strength and as durable as those made from hemp. Why import articles made from it when you can grow the grass and utilize it in domestic economy? Pick out the article from your timothy, your blue joint, and your common grass, plant it, gather the seed, replant it, and in a few years you will have immense fields of this valuable article. Or, if this won't work, get some seed from Spain and plant it, as I know it will grow in the United States just as well as in the climate of Andalusia.

T. M. NEWSON,

Consul.

UNITED STATES CONSULATE,

Malaga, July 15, 1892.

THE GERMAN AND ENGLISH HOP CROPS.

REPORT BY CONSUL-GENERAL MASON, OF FRANKFORT.

In the latest report of this series (September 10*) the hop product of Germany for the current year was estimated at 43,500,000 metric pounds (1 metric pound = 1.103 pounds avoirdupois) and the quality rather above the average. Since then the harvest has been finished, and, although the precise statistics can not be ready before December, enough is now known to enable commercial experts to estimate the result with substantial accuracy. It is the uniform practice of German hop farmers to underestimate their growing crop and to conceal its actual quantity until it is harvested and offered for sale. This is simply the peasant's traditional method of "bulling the market" by helping to create among dealers and consumers the fear of a short supply; but it usually has the effect of rendering the earlier estimates of even the best judges under, rather than above, the fact. Such has been the case this

*No. 145, p. 247.

year. The weather during the whole of September was favorable throughout Germany, and the crop actually harvested proves to exceed slightly in quantity the estimates which were made during the earlier days of that month. The best-informed commercial authorities now calculate the hop crop of this year in the several German states as follows:

	Metric pounds.
Prussia	3,000,000
Bavaria	27,000,000
Würtemberg	7,500,000
Baden	3,800,000
Alsace-Lorraine	7,000,000
Total	48,300,000

This is about 1,500,000 pounds more than the crop of 1891 and 4,248,000 pounds less than the average total annual yield during the past ten years. In respect to quantity, therefore, the German hop crop of this season is somewhat below the normal figure.

As to quality, it can now be finally stated that fully one-half of the entire German product is of a high and excellent grade. Of the remaining half a large proportion will rank as of fair middling quality; the rest is of varying degrees of badness, the result, mainly, of one cause, viz, sunburn, which, in many fields, turned the hops quite red in color and practically destroyed their value for all purposes except the manufacture of the dark beers of Great Britain.

As late as the 15th of September the English hop crop was estimated at 48,000,000 pounds, but the close of the harvest showed a total product of from 40,000,000 to 42,000,000 pounds; and this deficit has brought to Germany a swarm of English buyers, who are purchasing heavily the inferior grades of the new German crop. Notwithstanding this, the market is normal and steady. No German dealer will admit that there is anything in the situation which should justify the expectation of higher prices than those which now prevail. The farmers are to a large extent holding their crops in expectation of an advance, but the merchants are in a conservative mood and not disposed to buy much for speculative purposes. The result is a rather quiet market, with prices ranging all the way from 120 marks per cwt. for ordinary qualities to 200 marks and even higher for the choicest product of the "Spalter Land," a small district in Bavaria which produces annually from 15,000 to 20,000 pounds, which are to the general hop product of Germany what Château Lafitte is among the claret vintages of France.

FRANK H. MASON,
Consul-General.

UNITED STATES CONSULATE-GENERAL,
Frankfort, October 5, 1892.

MEXICAN TRADE AND HOW TO SECURE IT.

REPORT BY CONSUL FECHET, OF PIEDRAS NEGRAS.

The subject of this report is so comprehensive that a full discussion of it in all its manifold details must embrace the whole wide range of trade relations and conditions between the Republic of Mexico and the chief commercial nations of the world.

It may be doubted if any one person possesses the wide general information and practical knowledge of all the details of each branch of trade to enable him to discuss the large subject exhaustively and intelligently. A man would have to set about this work and give sufficient time to each individual article of trade to master its most minute details. Knowledge of details is the technique of trade, and in many cases can not be secured without the hearty coöperation of merchants dealing in the articles about which information is sought. This coöperation is not always possible. In this consular district there is not a single American commercial house. Trade is entirely in the hands of Mexican, French, German, and English houses, and it can not be expected that these European commercial houses will advocate trade expansion between the United States and Mexico.

The Mexican merchants are ready to buy in the cheapest and best markets for themselves. They have no predilection in favor of European markets; they simply seek to place their orders to the best advantage for themselves.

A detailed illustration of the requirements of consumers in Mexico is difficult.

POPULATION.

The population of Mexico can be divided into two classes—the well to do and the poor. The former consist of descendants of Spaniards, with little or no admixture of aboriginal blood; the latter, and by far the most numerous, are nearly full-blooded Indians. The well-to-do class, numbering about 2,500,000, have refined tastes. A great many have traveled in Europe and the United States, and it is noticed that on returning from foreign travel they bring back foreign ideas and new wants. They are ready buyers of all things that suit their taste, meet their wants, or catch their fancy; the sole restriction is their ability to buy the desired article, the cost of which in Mexico is nearly double that at places of production. So the well-to-do class in Mexico, in their requirements, are much the same as the same class in our own land. The poorer classes are a simple, primitive people of few wants and simple tastes. Save a few tools and a few cheap trinkets, this class consumes few articles of foreign manufacture, and their wants are met by their home products.

A comparatively long experience in the Republic of Mexico, traveling and visiting its most primitive regions and its chief cities, seeing the people face to face, and mingling with high and low, induces me to believe that lack of education is responsible, primarily, for the very small and rather

slowly developing demand for the luxuries and artificial wants of mankind. By lack of education I mean an ignorance of the very existence of such luxuries as are familiar to the poorest of our eastern cities. "What the eye sees not" applies here as elsewhere.

New wants, tastes, and desires are quickly acquired, and I would say to the American merchant and manufacturer seeking Mexican trade, come here, establish your warehouses, your sales rooms, and stores; display your goods, explain their uses, advantages, and adaptability to Mexican needs; and, above all, be patient. New avenues of trade are not built up in a month or a year. American goods are not sold in Mexico chiefly for the reason that the goods are not here to be purchased.

The current belief that Mexican buyers can not obtain in the United States markets certain classes of goods that are especially manufactured in Europe for the Mexican trade should be received with limitations. If conceded at all, it is the result of our country being young and demanding for its own consumption the greater part, and until lately—since the development of our manufactures—all of the output of our factories, causing our merchants and manufacturers to neglect outside markets that the overcrowded European countries needed as outlets for their productions. The great commercial countries of Europe long ago began to seek outside markets. Their agents, especially the Germans, settled here in Mexico, learned the customs and language, and entered into the social life of the people. They brought over what was salable, but did not attempt to create any new or artificial wants; they simply catered to existing needs, and now, as the people are advancing in knowledge and discovering new wants, they possess a great advantage over newcomers, and, their natural sympathies being with their home country, they buy there when possible.

EUROPEAN COMMERCIAL HOUSES.

All European commercial houses trading with Mexico have clerks who are perfectly familiar with the many requirements of the Mexican tariff, and this accurate knowledge, united with the ability to conduct a commercial correspondence in Spanish, can be stated without exaggeration to be one of the chief causes of the preference given to European goods by Mexican buyers.

While it is admissible to have consular invoices written in the language of the exporting country and have Spanish translations made at the Mexican custom-house of entry, it is rare to see invoices of European goods written in any language but Spanish.

European exporting houses not only have clerks able to write out the invoice in Spanish, but able to prepare the invoice in proper form as to classification for presentation at the Mexican custom-house. I have not infrequently known Mexican merchants to request of their correspondents in the United States "to please write in Spanish," alleging that the necessity of having translations made involved the risk of errors and misunderstanding through

lack of technical or business knowledge on the part of the translator, and would also reveal business secrets.

If the trade with Mexico is worth having and worth striving for in active competition with Europe, it is surely worth the additional salary of an employé familiar with Spanish. European firms dealing with Spanish-America always correspond in Spanish with their customers, unless they belong to their own nationality.

Let our merchants dealing with Mexico and Central and South America ask the young men applying for positions if they speak Spanish, and it will not take long before greater attention is paid to the study of this useful language.

MEXICAN TARIFF AND CUSTOMS RULES.

The federal revenue is chiefly derived from customs imposts, sale of stamps, and occupation taxes, and hence the importer and merchant have to pay into the treasury the larger portion of the money needed to meet the expenses of the Federal Government, and hence, also, we have in Mexico a high tariff, primarily for revenue. Every business man seeking trade in Mexico should procure a copy of the Mexican tariff and make a thorough study of the requirements of the law. As the subject is so extensive, I would recommend every American merchant to limit his study of the tariff to the classes of merchandise in which he trades. There are general rules in the tariff applying to all importations that merit close examination.

The present tariff, recently promulgated, is a great advance over all former tariffs in simplification and reduction of classification, and it possesses, also, the great advantage of explanatory notes to guide importers and customs officers in the determination of the proper classification of the importations.

Customs duties are specific, and, with few exceptions, all importations pay duty by weight. Weights are divided into three classes, viz, gross (*bruto*), net (*neto*), and legal (*legal*). The first two need no explanation, but the legal weight is especially a feature of the Mexican tariff, and is the weight of the article, with that of the bottle, pasteboard, wooden, or tin box, or whatever serves as a wrapper or holder of the article in its ultimate or smallest packing, and not including the weight of the outer larger box, case, or package in which the smaller packages are contained or the straw, excelsior, or paper shavings used to prevent injury in transportation. To illustrate: Take, for example, a box containing a dozen quart bottles of mineral water. The water in each bottle will weigh 2 pounds, or 24 pounds for the dozen; each bottle will weigh 1¼ pounds, or 15 pounds for all, and the outer or containing box will weigh 8 pounds. Then the gross weight is 47 pounds, the net weight is 24 pounds, and the legal weight 39 pounds.

As the bulk of importations pay upon weight, and mostly upon gross or legal weights, it will be readily seen how great is the importance of using a kind of packing as light as consistent with safety in transportation. The precaution as to packing is less forceful when duties are imposed upon the net weight, as it then becomes a question of a little extra railroad freight,

save in cases where the ultimate destination of the shipment is to a point beyond the line of the railroads. The last exception needs less consideration, owing to the rapid extension of railroads in Mexico. Most all of the larger cities of the Republic have rail facilities, and in all these cities are large importing houses that are depots and distributing centers from which remoter towns beyond the railroads are supplied. At these centers any needed repacking to meet the requirements of mule packing and mountain trails will be done; so that our shippers of goods to Mexico need only consider the matter of packing in relation to weight as affecting duties, and thereby the cost.

It is very important that each package should bear its mark and number, so as to be easily distinguished. Old marks and numbers should be carefully erased, because there is a fine up to $1 for each package having more than one mark or number or if the mark or number does not correspond with that indicated in the consular invoice. The importance of carefully marking and numbering is also due to the practice of generally examining one-tenth of the number of packages, and the inspector designates by mark and number those to be opened.

The rules for preparing consular invoices and manifests are very strict and should be carefully studied. Any omission or error, even clerical, imposes the liability of a fine.

As a rule, Mexican merchants, when ordering goods, are very particular in their directions how goods should be packed, labeled, marked, etc. This may often appear trifling to manufacturers in the United States, but they should remember that their own business experience may widely differ from long-established practices in Mexico.

CUSTOMS FINES.

It should be constantly borne in mind that the Mexican tariff is very severe in the matter of fines, and hence it will be well in all cases to have importations made by experienced customs brokers.

The practice of giving a portion of the fines imposed to the officer who discovers or reports the cause of a fine acts, naturally, as a strong temptation to discover all possible errors in the classification of the entry. Customs officials consider only facts, and not the intention, and the enumeration of the cases in which fines are to be imposed is very large.

Another important consideration is that the customs officials will not express an opinion upon the duties any given importation should pay or indicate the proper classification and manner of declaring the importation. Whenever goods are not plainly specified in the tariff and there is the least doubt as to proper declaration and classification, the best way, in advance of importation, is to send samples to the secretary of the treasury, city of Mexico (Secretaría de Estado y del Despacho de Hacienda y Crédito Publico), or, if samples can not be sent, cuts showing kinds of goods and full description of same should be sent in lieu of samples for a decision.

WEIGHTS AND MEASURES.

The metric system is the legal standard for weights and measures in Mexico; but it frequently happens that the old Mexican weights and measures are used, and hence it will be well to remember that there is a slight difference between the Mexican and English pound and that the Mexican inch is shorter than our English inch. The measures for cereals differ also in most of the States of the Republic.

A consideration of the commercial advantages arising from the use of the metric system in our foreign commerce suggests the conclusion that our old English weights and measures are stumbling-blocks to our Latin neighbors, whose commerce we seek.

We annually lose considerable trade with Mexico and the other New World nations, owing to the presistent use by our merchants and manufacturers of the English weights and measures in their circulars, catalogues, and price lists. These lists are not infrequently unintelligible to the foreign buyer. I have been in a large exporting house in New York city and found the salesmen totally ignorant of meters, kilograms, etc. Our French, German, and Belgian competitors all use the metric system, and Mexico and all the nations of the New World south of us use it. The use of the metric system was authorized by our laws many years ago, but, as it was not compulsory, we still cling to the old system.

CATALOGUES, CIRCULARS, ETC.

It is believed that our merchants and manufacturers desiring to extend their trade beyond home markets and to countries using the metric system will do well to base descriptions of their goods and estimate prices upon the metric system. This having been done, let the circular, catalogue, and price list be in the language of the sought-for buyer, and not in English; then the possible foreign buyer will be able to understand all the details as to weight, measurement, and price of the goods he is solicited to buy.

SOLICITING TRADE—COMMERCIAL TRAVELERS.

The commercial traveler or agent, to be successful in soliciting trade orders in Mexico, should be a gentleman in manners and address and should speak Spanish fluently. The Mexicans are a polite and formal people in their counting houses, as well as in their homes, and often do not understand the more familiar manners of other nations. Politeness, patience, and tact, joined to a full trade knowledge and ability to speak Spanish, will sell goods in Mexico. Goods are not sold in Mexico in the quick way of our own country; several days of chat and social intercourse often precede the closing order for a large bill of goods. Many questions must be asked and clearly answered; this is especially true when the Mexican buyer knows but little of American goods, and this ignorance is unfortunately but too common. As to the questions to be answered, the commercial traveler must know the weight, size, and all the subdivisions his goods may present; manner of packing, sometimes the measurements (cubic or square), rates of

freight from the United States to the town where he offers them for sale, customs duties, rates of exchange or difference in value between Mexican and United States money. In other words, he must be prepared to figure at short notice how much the goods he would sell will cost, laid down at the door of his customer, making proper allowances for possible additional customs charges, brokerage, and municipal taxes.

Without going so far as to state that all of the above requirements are absolutely essential to success, it can be safely stated that the commercial traveler able to figure quickly within a few cents one way or the other the cost of his goods delivered will get the order in preference to another man who, when asked, "What is the rate of freight, of exchange, the weight, the duty, packing, etc.?" can only answer, "Don't know." Every merchant worth dealing with in Mexico keeps a "book of costs," in which he has figured the cost prices of all his goods; and he can tell you very quickly how much the same article has cost him at different times, from different sources, and at different rates of exchange.

It is very clear that the merchant, looking over samples, catalogues, and price lists, can make his selections to best advantage when the soliciting commercial agent or traveler can answer his many questions fully and practically.

Mexico, since the introduction of railroads, has wonderfully improved and advanced. Life and property are safe. Any foreigner showing proper respect to the laws and politeness to the people will meet with no difficulties and encounter no danger in the orderly pursuit of his business.

LICENSE TAX.

Commercial travelers should always ascertain, before soliciting orders in a town, if there is a license tax to be paid. Of late years certain States have imposed a license tax on commercial travelers, amounting in some cases to $150. It is almost certain that a considerable reduction can be obtained by promptly applying to the town authorities for permission to exhibit samples and solicit orders for a specified time.

Samples brought to Mexico by commercial travelers are subject to duty if in such shape as to be salable merchandise. Duties may be saved by allowing the customs officers to cut or deface the samples so as to be unsalable, but still available as a sample with which to solicit trade; or a bond for double the duties, to run six months, may be arranged, and within the six months samples must be returned to the custom-house and the bond will then be canceled.

COMMERCIAL CREDITS.

It is believed that the most important subject affecting the whole broad question of trade with Mexico is that of commercial credits. It may not unreasonably be called the very corner stone of the entire structure. The credit system prevails throughout the Republic; the larger importing houses buy on credit, they again sell on credit to the smaller tradesmen, who, in turn, sell to the final buyer (consumer) on credit.

One of the great advantages offered to Mexican buyers dealing with European houses is the long credits given to them, ranging from three to twelve months, with interest barely exceeding 8 per cent per annum, and very frequently as low as 4 per cent. American houses, as a rule, insist upon cash payments or sight draft attached to bill of lading, and it happens not infrequently that goods are paid for before the shipment is received.

The banks in Mexico can not, as a rule, be used, as in the United States, to obtain information as to the commercial standing of business firms. Very few business houses have deposits in the banks, and, if any, are generally small. In most of the smaller towns the bank lends money at high rates of interest and only upon the best security, and their conveniences for business houses are very limited, consisting in most cases in discounting acceptances and providing exchange on foreign countries.

The practice of giving credit is so deeply rooted all over Mexico that only a few commodities can be sold upon a cash basis. Business houses have to give from four to six months' time on the most insignificant sales, the time given varying with the class of goods. It should not be overlooked that the buyer of a bill of goods upon long time has nevertheless a large cash outlay to make for freights, customs duties, etc., often largely exceeding in the aggregate the first cost of the goods. When a merchant finds himself unable to make his payments at maturity, an extension of time is, as a rule, easily secured with the charge of 1 per cent interest monthly. The capital of the majority of the larger firms is engaged largely in their outstanding account, and when times are bad, as is now the case in Mexico after three years of drought, collections are made with difficulty, and extensions of time have to be granted to almost all the creditors in the smaller towns, who, in turn, have been unable to collect from their customers, owing to the failure of crops, loss of stock on the ranges, etc.

Let us now contrast what the American and European commercial agents have to offer to make them buyers. After showing his goods the American agent states terms as follows: Cash, sight draft attached to bill of lading or at thirty days, or, in rare instances, at ninety days, with the acceptances dated when goods are delivered at the seller's railroad station for shipment to the distant buyer. No matter what the rate of exchange may be when the note is presented, it must be paid or it is protested. Delays in the delivery of goods are not taken into consideration. While it may be assumed that in most cases carload lots will reach destination within thirty days from date of shipment from the United States, smaller lots will take much longer, so that the time granted by the United States firms is mostly expired before goods are received, and hence it amounts, in the majority of cases for the Mexican buyer, to a cash-on-delivery purchase, if not more, when shipments are delayed. Now, if the Mexican merchant buys of a European house, if he is trusted at all, he can, after a few transactions, have all the time he wishes by paying a moderate annual interest of from 4 to 8 per cent. He buys then at from four to twelve months' time. The steamer

carrying his goods may be delayed a few days by rough weather, but not weeks by washouts, snow blockades, strikes, errors in routing, etc., and sea freights are lower than all-rail freights. The Mexican buyer can thus give his own customers the three to four months they require.

Although there is no Bradstreet or Dun's agency in Mexico, European firms are generally well informed about the financial standing of Mexican houses. There are so many Europeans established in Mexico that it is easy to obtain reliable information through them, and, besides, the numerous commercial agents sent out make it a strict rule to gather all the information possible as to the standing of Mexican houses, and these agents take back to Europe well-formed lists of firms and amounts of credits that may safely be given. Business failures have been more numerous lately, owing to the general depression of trade caused by failing crops and losses of live stock, but, as a rule, business in Mexico is upon a very conservative basis, and the bankruptcy laws are so severe that failures are more dreaded than with us. The European houses with branches in Mexico possess a greater advantage still; as they have their own representatives right here in Mexico, they are kept well posted as to the financial standing of buyers.

This question of credits is of the utmost importance to United States manufacturers and export houses wishing to successfully compete with European houses for Mexican trade. It must be admitted that much success has already been achieved in modifying or changing the old business methods that have so long prevailed in Mexico, but much remains to be accomplished before cash transactions can become the general rule, and, so long as European houses offer long credits, the scales will turn in their favor.

EXCHANGE.

The present high rate of exchange influences merchants to buy as small a stock of goods as possible, lest a lowering of the rate of exchange would entail a heavy loss. It is very obvious that a buyer figuring upon a net profit of 10 per cent upon his sales will not lay in much stock when exchange is at $1.40, with a possibility that before he has disposed of his stock exchange may stand at $1.25, as his competitors buying at the latter rate could undersell him, even should he sell at bare cost. An equitable and convenient arrangement to propose to the Mexican buyer afraid of taking the chances of wide fluctuation in rates of exchange would be to have them pay Mexican dollars for American dollars on the face of their bills, granting them time, not to exceed six months, within which they could pay the balance at whatever more convenient rate of exchange might obtain.

COMMERCIAL GUARANTIES.

A Mexican merchant wishing European credit gives as references some merchant in his own town or some well-known Mexican or European house in the country he wishes to buy from. In very few cases the reference comes from a banking house. The references are most cautiously given, and with them the desired credit is, as a rule, obtained. As the banks

seldom have deposits of any large amounts from the merchants, they would not indorse standing or solvency of a merchant except in isolated cases and unless arrangements are made to have value of the goods deposited in the bank. This plan could be worked out in detail and might, it is believed, in time make business transactions easier and do away with or mitigate the hard obligation to honor a sight draft for goods not yet received and that may not arrive for several weeks after the payment of the draft.

RATES OF INTEREST, TIME, ETC.

The rates of interest and discount mostly prevailing in Europe for Mexican buyers is 6 per cent per annum. The usual time is from four to eight months. When a firm is well known the privilege of selecting the most favorable time for remitting is easily granted. Time of credit commences from date of bill of lading.

The average time of merchandise in transit to Mexico from European chief ports is from six to eight weeks by all steam routes and twelve weeks by sailing vessels if landed at a Mexican port; if shipment is from Europe via New Orleans or Galveston, from three to four weeks must be added to the time of transit. The time would seem to be fast approaching when the port of Tampico will be the landing port for European shipments for northern Mexico, and also for a large part of the American shipments. By water routes less than carload lots enjoy the same through rates of freight as larger shipments, and the saving is considerable.

Many European houses with branches or correspondents in Mexico are ready to handle Mexican products, and this creates an exchange beneficial to both sides.

BANKS.

Banking institutions upon the American plan, *i. e.*, a bank ready to help deserving enterprises and to accommodate merchants offering proper collateral securities with money at a moderate rate of interest, would be a source of great profit and would undoubtedly impart a wonderful impulse to the commerce between the two countries.

RAW MATERIAL.

In this consular district there is no demand for foreign raw material, save baled cotton. Cotton to the extent of 6,000 to 10,000 bales is imported from the United States annually at the port of Piedras Negras to supply the cotton mills.

PRICES AND FREIGHT RATES.

An earnest effort has been made to secure a reliable comparison of European and American prices of the same articles. Many difficulties have been encountered, and the few comparative prices obtained are so surrounded with doubtful circumstances that no value attaches to them. Merchants will readily show their price lists, but hesitate to produce their line of discounts.

This hesitancy arises from the vicious practice of some foreign houses granting different discounts in the same town to different buyers; each buyer is led to think he has been given a special discount. Comparisons of prices should be made upon articles of trade alike, or as nearly so as possible; this is difficult. Cotton and wool piece goods vary in width, number of threads per square inch, and in weight per yard.

The condition of freight rates from the chief seaports of Europe and of the United States has not been to the advantage of American trade. Sea freights have been less than all-rail rates in many cases. Merchants have told me that their freight bills from Hamburg were less than from New York. These circumstances are fast being arranged, however, so that our American traders will not have to contend against freight rates favoring their European rivals.

ESTABLISHMENT OF AGENCIES.

In closing these preliminary remarks I would emphasize my firm belief that the American does not sell his goods in Mexico because he does not adequately try. Let him work as shrewdly and as energetically as the European trader and there is small doubt that he will find the commercial harvest satisfactory. The Mexican people collectively are very ignorant concerning the United States. This ignorance must be dispelled and many causeless prejudices removed. Time and tact, joined to liberality and honesty in commercial relations, will achieve all we desire. To extend our trade with Mexico we must show the people the advantages we can offer them. This first and indispensable step seems easy and practicable. Let our traders (merchants and manufacturers) establish joint agencies in the chief cities under the management of capable and energetic men speaking Spanish and knowing the people, expose their goods at these agencies, and explain their uses, advantages, and adaptation to Mexican needs. Connected with these central agencies should be several agents soliciting trade over certain territory. Policy would suggest that these agents sent out to solicit trade should be young Mexicans of business training. Such a system must succeed, and in no other way can we successfully attack the supremacy now held by European dealers.

BLEACHED AND UNBLEACHED COTTONS.

With the exception of the free-zone territory, where relatively large quantities are consumed by reason of the duties being but one-tenth of the full duties, it may be said that Mexico offers but a very limited field for sales of bleached and unbleached cotton domestics.

Of late years the best American and English spinning machinery has been imported and cotton mills established in Mexico, and a very good grade of cotton cloth is now produced. The almost prohibitory duties make it a profitable investment, even when using American cotton paying 8 cents per kilogram gross weight, or nearly 4 cents per pound.

COTTON PRINTS.

American mills first manufacture and then solicit orders for their stock. The European manufacturers reverse this method and first solicit and then manufacture. European manufacturers send out patterns, designs, and colors, together with samples of all the different grades of gray cloth (unbleached domestics) made. The buyer first selects the gray cloth of a quality and width best suited to his local trade and then selects the design or pattern in colors to be printed upon this gray cloth after bleaching; thus the buyer obtains exactly what he wishes, as determined by his own experience of the tastes and needs of his customers. In the United States he can not proceed in this way; he can only buy from stock, and even then he can only do so in the fixed proportions of colors and designs of the original package. If American print mills will consent to manufacture from special designs, the order must be large, while in Europe the minimum for a special order is 200 yards.

Mexican buyers claim that European houses are more accommodating than American houses in following out their suggestions in making up special orders. For example, an American firm sends out samples of prints to a Mexican customer; he examines the quality, design, and color, and likes it, but, upon investigating what the cost will be, finds that the sample, instead of having only up to thirty threads per square millimeter (about one-fifth of a square inch), has thirty-two threads counted both ways. The Mexican buyer will write to the American house: "I am pleased with your sample number so and so in color, design, and quality, but, as it carries thirty-two threads to the square millimeter, the duty will be 15 cents per square meter, whereas if it carried but thirty threads the duty would be but 12 cents, and I could sell it readily; could you therefore manufacture so as to save me this 3 cents duty per meter?" The reply probably would be: "Our looms are arranged to turn out that number of threads, and can not be changed." In Europe, on the contrary, such a suggestion would be regarded as a very valuable bit of trade knowledge and all dispositions at once taken to manufacture in conformity with the suggestion, and the probabilities are that the European house will send out two very different grades of the same prints—one carrying the maximum number of threads permissible under the 12-cent duty and the other of finer grade containing all the threads that the square will carry, so as to make it worth the extra 3 cents duty.

A second and significant illustration of some of the peculiarities of Mexican trade may be cited. A merchant observes that his competitor advertises a certain fabric at 25 cents per meter. Through a friend he buys a few meters and, after measuring it, finds that by reducing the width a few inches he can undersell his rival. If he writes to an American house to have a few pieces manufactured equal in all respects, only narrower than the sample, the chances are that he will not be accommodated; whereas if he

addresses himself to a European house he will be told that his order will be filled if he will take a certain number of pieces—the minimum is generally 200 yards.

It would be manifestly absurd to claim that our manufacturers should change their standard sizes to meet the special requirements of every customer; but would it not be practicable and wise for our print manufacturers to send out a man to make a thorough examination of the tastes and needs of the Mexican market? The samples manufactured from such practical observation and study would be sure to please a majority of buyers, and, should changes still be necessary, they would not touch points so important as those of weight, number of threads, width, and finish of goods, and the experience gained would amply repay the expenses of such a tour of observation.

The home factories are turning out some fabrics in cotton prints that are constantly improved upon. While American prints are superior in point of design and colors to the home product, it will soon be possible only to import prints of special designs and fine finish too difficult and expensive to produce at the home factories.

The trade with Mexico in American prints has largely increased of late years, owing to the improvement in colors, designs, and varieties of patterns.

WOOLEN PIECE GOODS.

The home factories are turning out the articles chiefly used by the poorer classes, such as blankets, serapes (shawls), and ponchos. These articles are often cheaper in Mexico than in the United States, and are well protected by the tariff. The finer grades are in good demand, especially in black, but are principally imported from France and Germany, because cheaper than in the United States. Ladies' shawls, known as "rebozas," of fine wool are largely imported.

Duty on woolen piece goods is calculated on the weight of a square meter (about 30 inches square). Fabrics weighing about 8 ounces per square meter would pay comparatively the lowest duty of 45 cents per square meter. It is well to remark that both lighter and heavier grades than 8 ounces pay higher rates of duty.

When sending samples of woolen goods, the weight, according to tariff ratings, should always be very carefully stated as a guide to cost. The Mexican Government, by its high tariff on woolen goods, is fostering this important industry.

THREAD AND WORSTED GOODS.

Home factories have been started and are producing a fair grade of goods. The demand for these lines of goods is limited, and the duty of about 65 cents per pound checks any great development.

European common and fine grades of thread goods are sold so cheaply that competition will be difficult. Home-manufactured worsteds do not

claim to be fine, but meet well the wants of the middle classes. European worsted goods of the better grades are so far the only ones imported, and the prices at which they can be brought leaves a small competitive margin for our own manufacturers. Belgium and France furnish the finest grades and Germany cheap imitations, mostly printed.

SPOOL AND MACHINE THREAD.

England supplies Mexico with spool and machine thread, and the name of J. & P. Coats is so well known that, in so conservative a country as Mexico, it will be a difficult matter to compete with them. The consumption is very large, however, and it would seem that the field is worth contesting and should receive more attention from our thread manufacturers than it has. The dealers are making small profits, and would welcome competing brands of thread from the United States.

TWINE AND CORDAGE.

For twine the field is not promising. Mexico abounds in vegetable fibers—ramie, ixtle, etc.—and under the protection of a prohibitory duty home factories have been started in many places.

The remarks concerning twine apply to all cordage under 1½ inches in diameter. Above 1½ inches in diameter all cordage is classed as cables, and is free of all duty. The best comes from England, and is cheaper than in the United States.

That portion of the Mexican tariff devoted to the various articles embraced under cotton and woolen piece goods, thread and worsted goods, spool and machine thread, twine, cordage, etc., and including silks and linens, is the most elaborate part of the tariff, and a thorough study of the tariff will be indispensable to our manufacturers. In many cases very slight differences will suffice to class an article under a much higher rate of duty. The motto for the Mexican markets observed by European manufacturers would seem to be "cheap articles with a neat appearance." The tariff is so high that in most instances the cost to the consumer is double and treble the original cost.

SILKS AND RIBBONS.

At present the great bulk of importations of silks and ribbons is from Europe—France, England, and Germany leading in these lines.

The duties are very high, both upon all-silk fabrics and silk-mixed goods, but, as the consumption is large, this trade is worth contending for; and, in view of the great progress made in silk manufactures in the United States in the past twenty years, no reason can be advanced why the United States should not supply Mexico with silks, silk-mixed goods, silk hosiery, and ribbons. The United States now produce more silk goods than England or Germany, and are only rivaled by France.

In quality and in durability our plain silks are equal to Lyons silks. In figured and brocaded silks, the Mexican merchants tell me, France leads,

but we are rapidly catching up. In ribbons we excel and should easily supply Mexico, and the same is true of velvets. I know of no peculiarity of color, design, or width called for by the Mexican trade.

I have been astonished to find many Mexican merchants ignorant of the fact that silk goods are even made in the United States. Whose fault is it? The trade is here awaiting our American enterprise. I firmly believe it has only to be worked up to yield large results.

CARRIAGES, WAGONS, TRUCKS, ETC.

With the exception of a few very fine carriages imported from Europe for use in Mexico city, practically vehicles of all classes come from the United States. The tariff is quite plain and very high. The tendency seems to be to help out home industry by putting half of the regular duties upon a carriage "in the white," and with this concession it is probable that Mexico as a market for finished foreign carriages will be confined to the richer classes. The tariff defines carriages "in white" to mean "those whose woods are unpainted and unvarnished, and whose cushions and other trimmings are so incomplete as to need hand labor to fit them for use."

The facilities afforded to the Mexican home factory by the reduction of one-half of the regular duties when carriages are "in the white" will create a large demand for this class of goods, and the attention of our carriage manufacturers is called to this fact.

Carts without springs, spring delivery wagons, and hand and cargo trucks pay upon gross weight, and hence they should not be crated, and, if possible, should be prepared in such a way as to leave out the boxes or side and end boards to be made up of native lumber. Road wagons, sulkies, and dogcarts are classed as carriages, and, on account of their light weight, are comprised in the highest class of duties; in some cases the duty is six times the original cost. The duty on carriages, and as such are to be considered all vehicles with springs not exclusively adapted for transportation of merchandise, is graduated according to the weight, the heaviest paying the lowest rate of duty. The study of the tariff will, in many cases, cause the carriage-maker to add a few pounds to a certain carriage to attain a lower duty. For example, a carriage weighing up to 500 kilograms (about 1,100 pounds) would pay 50 cents per kilogram duty, whereas one weighing 510 kilograms would pay only 45 cents duty, or a saving of $20.50 in duty by increasing weight 10 kilograms, or 22 pounds.

As a general rule, all vehicles must be of stronger make for use in Mexico than in the United States. The roads and street pavements are rough and very hard on vehicles.

American buggies, phaëtons, and surreys are all popular in Mexico. The high duties are the only bar to extending demand, and it is believed that our carriage-makers might well establish finishing shops for painting, varnishing, and trimming carriages at central points and import their carriages from the United States "in white," or unfinished.

DRUGS, CHEMICALS, DYESTUFFS, ETC.

Until a few years ago there were hardly any drug importations from the United States. Recently some pushing, energetic firms have sent agents to Mexico speaking Spanish and well acquainted with the trade, and it is astonishing to see what good results have been accomplished. American preparations, and especially proprietary medicines, are now seen in most drug stores. Before, and now to a great extent, French patent medicines were the only ones in demand or known.

The great majority of drug stores are owned by practicing physicians, who are very familiar with French prescriptions, having used French textbooks in their studies, and they give the preference to French drugs.

The sale of patent medicine is less than in the United States, relatively, on account of higher duties. Sulphate of quinine is now lightly taxed, and much is used and largely imported from the United States.

With the exception of Florida water, imported in large quantities and sold even by grocers, few articles of perfumery are now imported from the United States. Perfumery is from France chiefly, and, in spite of high duties, is largely used.

Ordinary unscented soaps can not be imported, on account of duties. Fine toilet soaps are heavily taxed, and demand for them is confined to the richer classes. Cocoanut soap can be imported, as it pays the light duty of 25 cents per kilogram gross weight, and is very largely used in Mexico for toilet purposes. Medicinal soaps fare better as to duties, but shippers should be sure that what they call medicinal soaps are so classed by the Mexican tariff. The new tariff is a great improvement on former imposts, and the explanatory notes are of the greatest help. Nothing is harder than to prepare the Mexican customs papers for an invoice of drugs. The danger of fines is very great, and an exhaustive study of the tariff is needed.

To meet the requirements of the country, drugs, whenever practicable, should carry descriptions and directions in Spanish. French drug houses have issued in Spanish some very elegantly illustrated catalogues, with every article shown in colors, and an ingenious scale allows actual size of goods to be shown, and weights are given.

Drugs imported into Mexico should have their Latin names upon packages. Packing of all drugs, etc., should be as light as consistent with safety in transportation, as the weights of flasks, bottles, pasteboard boxes, and all interior wrappings are included in the weight of goods paying duties upon legal weights.

Caustic soda in drums is very largely used throughout Mexico in soap-making, but comes exclusively from England, because cheaper; and, unless the English price can be met, this large trade must remain in English hands. Large amounts of cotton-seed oil from the United States were imported for soap-making prior to November, 1891, when a duty of 5 cents per pound was imposed, and imports have almost ceased. Disinfectants, hide poisons, and sheep dips are on the free list, are largely used, and chiefly come from

the United States. Hops are on the free list; but English, Bohemian, and Bavarian hops now supply the demand. The large number of breweries being established in Mexico will greatly augment the hop imports, and the Mexican market may well receive the attention of hop-growers in the United States. The demand for dyestuffs is very small, as home dyes supply the needs of home industries.

FOOD AND FOOD PRODUCTS.

Corn, cereals, meats, and flour of all kinds are now virtually excluded from all parts of Mexico, save the narrow strip of country called the free zone, on account of a prohibitory tariff. Sugar is also excluded for the same reason. Molasses and sirups are imported to a limited extent, chiefly for the American residents.

Preserved and conserved fruits in tin or glass carry an excessive duty, and consequently the trade in these articles is limited. The duty upon a 2-pound tin is 75 cents. Our American canned fruits pay the same high duties as preserved and candied fruits that are chiefly imported from Europe. Canned vegetables, pickles, and sauces can be more largely imported, as the duty is about 8 cents per pound. French, German, and English products are more common in Mexico than those of the United States, but from an investigation of prices and qualities it is believed our American canned articles can successfully compete in the Mexican market, and should be pushed, as the field will repay the effort.

Condensed milk is from the United States. The demand is limited and largely confined to American mining camps, railroad construction gangs, etc.

Crackers have a fair sale, especially the sweet fancy crackers, and should be shipped in very light tin cases, as the duty is 7½ cents per pound gross weight.

Potatoes, onions, and apples come from the United States and find a good market.

Dried and evaporated fruits are much cheaper in Mexico than canned goods, as the duty is but 5 cents per pound net. There is a complete lack of fresh fruits in the northern half of Mexico for the greater portion of each year, and the demand for evaporated and dried fruits from the United States is very good and may be very greatly developed.

Potted meats and game under the former tariff were fairly in demand, and with the duty now reduced to 8 cents per pound, including weight of tin or can, the demand will be largely increased. European potted meats command a well-deserved reputation, but some of our American specialties in this line are well abreast of the European in regard. "Deviled ham," for instance, is everywhere well known, and under the name of "Jamon del Diablo" (Devil's ham) finds a ready sale. Boneless hams in tins can be imported and sold cheaper than hams in canvas. Potted meats from Europe are generally packed in glass with tin covers, and this mode of packing is preferred in Mexico, as tin is believed to be dangerous.

Fresh fish and oysters are on the free list. Corpus Christi, Tex., has quite a trade in this line, but with the opening of the Tampico route fresh fish from Mexican waters is coming in. Canned and smoked salmon from Oregon have a large demand, and the trade admits of great expansion if looked into and pushed.

Ham, bacon, and sausage pay about 10 cents per pound duty. For these prime American products there is a good demand, especially in the winter months. Recently packing houses have been established in several principal Mexican cities by firms from the United States, and large importations of live hogs from the United States are made, notwithstanding the high duty of 1½ cents per live pound. The packing houses are putting a good article on the market, and it will be only a question of time when American ham, bacon, and sausage will be a rarity in Mexico.

Lard pays a duty of 10 cents per pound, which is prohibitory, and the American packing houses established in Mexico control the lard market outside of the zona libra.

Butter in tubs and cans is imported in lots ranging from 5 to 50 tubs at a time, but is generally oleomargarine or butterine. Good dairy butter retails at from 50 to 75 cents, and the scarcity of pasturage makes the home supply very limited. Some French and Danish butter is imported, the former in glass and the latter in tin; but there is no doubt that if Mexican consumers could be convinced that American butter is not exclusively and necessarily oleomargarine, good prime butter from the United States would find a ready market, especially during the winter months.

HOUSE FURNISHINGS.

To further protect the home industries the tariff in force from November 1, 1891, has raised the duty upon common furniture. The better grades of foreign make, however, need not fear Mexican competition for years to come. Mexico has splendid furniture woods, but they are not properly seasoned and in a condition to be used by furniture-makers.

Under the tariff the so-called common woods, such as pine, poplar, oak, elm, maple, ash, and gum, are admitted free of duty, and articles of furniture made from these woods have to pay 10 cents per pound duty; so that only pieces having much carving and molding and fitted out with mirrors and marble tops can stand the duty. Native furniture is now turned out with marble tops, but no mirrors. Mirrors pay a heavy duty, but when imported as part of furniture they only pay duty of the furniture to which they belong.

On the other hand, the so-called fine woods, such as cherry, walnut, ebony, rosewood, etc., only pay a duty of 1 cent per pound, and articles of furniture made of the fine woods pay only 2½ cents per pound duty more than the furniture made from the common woods, or 12½ cents. Veneered furniture is classified as fine furniture. As a rule, Mexicans do not take kindly to articles of furniture finished to display the natural grain of the wood; dark walnut is their great favorite.

As already stated, marble tops and mirrors imported with the articles of furniture they belong to do not cause an increase of duty. In case of marble tops a saving of duty even can be made by declaring them separately, as the duty is lower on marble tops than on furniture. The reverse is the case with mirrors, hence they should not be declared separately, but left to pay furniture duty.

The new tariff is liberal, inasmuch as furniture is taxed by legal instead of by gross weight, that is, without including boxes, crates, straw, excelsior, etc., and this does away with the tendency to decrease weight of packing at the risk of injury to the furniture in transportation.

Willow and rattan furniture is prized and is chiefly supplied from the United States, but our American manufacturers of rattan, willow, and bamboo furniture have not made any attempt to secure this valuable market for their wares. The lightness, cheapness, and cleanliness of rattan commends its use above all other kinds. Vienna bent-wood furniture has a very large sale in Mexico, and is used when rattan could and would be if rattan manufacturers will display the same degree of enterprise as the German houses handling the Vienna bent wood.

Iron and brass bedsteads are in very great demand in Mexico; the people object to wooden ones, claiming that they harbor insects. Bedsteads prepared for sale in Mexico should always have mosquito-bar attachments. Iron and brass bedsteads are almost wholly imported from England, because much cheaper than in the United States, and until we shall make and sell iron and brass beds to meet English prices nothing can be done in this line. If iron bedsteads, nickel plated, could be made and sold in Mexico as cheaply as those of brass, there is hardly a doubt that a ready market would be found in Mexico, and it is believed that this possibility merits the attention of our manufacturers. Plain, simple, iron bedsteads, unornamented and made cheaply of gas pipe, which comes in free of duty, are made in Mexico.

In carpets, rugs, etc., there has been a decided change. Formerly dealers in first-class goods in Mexico only imported European carpets. Belgium, France, England, and Germany divided the trade. The finer grades of English carpets, such as body Brussels, Wilton, and Axminster, are dearer than corresponding grades of American carpets. Germany furnishes to the Mexican markets a cheap imitation of the higher grades of carpets and rugs and finds for them a fair sale. Ordinary and middling grades of carpets and rugs of wool are made in Mexico. The United States is the largest manufacturer of carpets in the world, and in design, color, and fabric they are equal to corresponding European grades. In Mexico the demand is more for large rugs than for carpets. Square and rectangular rugs, to well cover the central portion of large rooms and made up in tasteful designs and colors, will find ready sale in Mexico. The duty is very high, and, as it is levied on the square meter, the best grades are least affected by it.

I would suggest to our carpet manufacturers that they send a skilled carpet man on a trip of observation to the chief cities of Mexico to note the pat-

terns, colors, and grades most in demand. The trade results to flow from such a tour of observation will well repay the expense.

Picture frames and ornamental moldings are subject to a very high duty, and, in order to reduce it to a minimum, only shell goods, that is, thin strips to be afterwards nailed to a heavier frame, should be imported. Some frames and moldings are made in Mexico, but so far the plaster covering and gilding have not been successfully accomplished, and the demand hardly warrants the investment of money to achieve perfect work.

Furniture "in the white," that is, unpainted and unvarnished, pays a little less than 4 cents per pound duty, which is less than one-half what the finished articles pay, but it should be borne in mind that no bent, carved, turned, or cane furniture or mirrors or marble tops are considered as coming under the head of furniture "in white."

HARDWARE AND CUTLERY.

The following table will show the origin of the several articles imported under this head:

Articles.	From—
Cutlery	Europe.
Shelf hardware	United States and Europe.
Cut, wrought, and wire nails	Do.
Axes, shovels, hoes, and picks	United States.
Locks, bolts, and hinges	Do.
Iron and steel in bars and bolts	United States and Europe.
Plate iron and steel	Do.
Corrugated iron	Europe.
Stoves, cooking and heating	United States.

The demand is daily increasing for United States lines of hardware and manufactures of iron and steel.

English and French cutlery of fine grades and German cheap grades is well introduced throughout Mexico, and it will be very hard for our cutlery-makers to compete in price with European cutlery, especially with the very cheap German grades. In competition with the finer English grades we must show that American grades are equal, if not superior, and as cheap. In competition with the German cutlery only price has to be considered, as the quality is inferior to anything manufactured in the United States.

There is a growing demand for building and furniture hardware of American make, and several of our large hardware firms have already built up a profitable trade in Mexico, notably New Orleans and St. Louis houses. Much energy and trade skill, combined with tact and readiness to offer liberal accommodations in credits to reliable houses, will be needed; for the hardware trade of Mexico is almost exclusively in the hands of Germans, who are shrewd traders, and in the struggle to retain their control of a valuable line of trade will be well backed in Germany by long credits extended by the parent houses to their Mexican branches or correspondents.

Arms, shovels, picks, hoes, etc., are on the free list, and large quantities are imported from the United States; but the trade can be quadrupled.

Nails of all kinds are imported from the United States and Europe, with the balance in favor of the United States. As the quality of the American nail is generally unexcelled, the cost is all that has to be considered. First cost and freight are the factors of ultimate cost, and the low water freights often make the European nail cheaper than the nail from the United States.

It is now generally admitted that American tools take the lead in point of handiness and good make, and the Mexican artisan wishes good tools. He was originally content with poor tools if cheap; but he is rapidly learning that poor ones are dear, and that good tools are cheaper for a poor artisan to buy, even at higher first cost. On tools the tariff of November, 1891, was reduced to 5 cents per kilogram, or one-half of the old duty. This should mean more tools from the United States.

Iron and steel in bars, plate iron and steel, and angle and T iron are imported from the United States, but more largely from Europe, owing to cheaper first cost and lower freight rates. Corrugated iron is used in very large quantities, but it comes almost exclusively from England, because cheaper. At present the difference in price between English and American corrugated iron is about 1 cent per pound in favor of the English, and until the difference shall have been overcome the English brand will hold the market. With equal prices the American brands will possibly be preferred.

Barbed fence wire is very extensively used in all the northern part of Mexico and comes exclusively from the United States.

It is reasonable to predict that before many years the United States will sell all the hardware in Mexico, save a few specialties from Europe. The Germans, who now control the hardware trade, will fight hard to retain trade supremacy, but they will probably be compelled to buy more largely from the United States.

An American hardware store in combination with all lines of agricultural tools and machines will do well in any of the larger Mexican towns.

HEMP AND FLAX MANUFACTURES.

There is very little demand for hemp and flax manufactures, with the exception of ropes of large size. Whatever importations there are come from Europe, because cheaper.

Jute bagging is extensively imported from England (largely in bonded transit through the United States). Ore sacks of jute are largely imported from England and frequently directly from Calcutta. Ore sacks must be made extra heavy; the sizes vary with weight and class of ores to be shipped. A finer grade of jute fiber has been made into flour sacks and will replace the flour sacks of domestics, provided the cost is the same. To be admitted free of duty bagging must be made into sacks.

LEATHER AND RUBBER GOODS.

The tariff on these lines of goods is almost prohibitive, and is completely so on the cheaper grades. In all that makes good leather that of the United States will compare most favorably with European, and the prices are evidently lower on many grades or we could not export leather to Europe; but, notwithstanding this fact, I am informed that the bulk of the importations of leather into Mexico comes from Europe. If this is a fact, the reasons are superior business enterprise on the part of European dealers. The duty on leather of any and all grades is $1.50 per kilogram, or 2.2046 pounds.

It may be of interest to show what 1 pound of prime American leather will cost in Mexico, exclusive of freights and commissions. Good oak-tanned harness leather is now quoted at from 30 to 35 cents per pound. Estimating at 32 cents per pound, a kilogram will cost 70½ cents in American coin; this, converted to Mexican silver at the present rate of exchange of $1.50, will be $1.05 per kilogram. Adding the duty of $1.50, we will have $2.55 as the cost in Mexico of 1 pound of harness leather that originally cost 32 cents, without any allowance for freights, commissions, etc. The best grades of Mexican harness leather cost about $1.90 to $2. The finer grades of calf, kip, and patent and morocco can stand such a heavy duty.

Saddlery and harness work are so heavily taxed by the tariff that the home industry has prospered and made notable progress. The native leather chiefly used is of an inferior quality, and Americans and other foreigners prefer to import harnesses, and sometimes saddles, from the United States. A common harness used by ranchmen and miners, known in the trade as "short-tug wagon harness," having a half chain at end of tug and common, heavy, wood hames, will cost in the United States about $14 at retail and will weigh about 14 pounds. This harness shipped to Mexico would be entered at 20 kilograms in weight and would pay $30 in Mexican money duty, while it cost but $14 in American money, or $21 in Mexican coin. The iron tugs and wooden hames weigh 15 pounds, and, entered separately, would pay a much lower rate of duty. A fine carriage harness will weigh much less, and, paying the same rate of duty, will cost much less, relatively, than the common wagon harness. We may fairly assume that buyers of fine carriage harness are better able to pay high prices than the purchaser of the common harness. The result is that the cheaper harnesses of heavy weight for common use are almost exclusively produced in the country.

Boots and shoes are very little imported. There are many tanneries in Mexico and a superabundance of shoemakers making footwear to measure. The shoe almost universally worn in Mexico by men, women, and children, and even babies, has a very high, sloping heel and long, pointed toe. If the tariff permitted the importation of ready-made shoes, a special shape would have to be made for this market.

Leather and rubber belting is imported almost wholly from the United States, with duties imposed when separately imported and free when imported as a component part of machinery.

Practically no rubber footwear is imported to Mexico. Rubber ponchos and mackintoshes come almost exclusively from Europe, because cheaper than in the United States. The trade in this line of rubber goods is sufficiently large to merit the attention of our rubber manufacturers. Patterns of rubber ponchos can easily be secured. Ponchos and rubber coats for the Mexican trade should have three essential points—cheapness, light weight, and a certainty not to stick when rolled up for any time in hot weather.

WINES AND LIQUORS.

With the exception of whisky and some alcohol, no spirits are imported from the United States. The demand for whisky seems to keep a close relation to American immigration to Mexico, as but little is used by the Mexican people. Mescal and tequila, the native strong drinks, are preferred. Whisky should be imported in barrels and with benefit of drawback from the United States internal revenue. In barrels the duty is 30 cents per kilogram gross weight, and in bottles 50 cents per kilogram net weight.

Beer is chiefly from the United States, although German bottled beer in cases has a fair sale. Previous to the new tariff of November, 1891, there was a decided advantage to ship beer in kegs, as it paid half the duty on bottled beer, estimated upon net weight; but this duty is now imposed upon gross weight and is prohibitory on account of the great weight of kegs. The rapid expansion of the brewing industry in Mexico must seriously affect beer importations from the United States. These breweries are American enterprises.

It is strange that California brandies have not been more largely introduced in Mexico, as they are of fine quality and claimed to be very pure. Considering the very large quantities of poor French cognac imported, it would seem that California brands, once known, would be favorably received and a large and lucrative trade result.

Pure wines are sure of a large sale. As the complaints of adulteration of European wines are numerous and growing, California wines are sure to secure a high reputation and large sales if properly introduced and advertised. Still wines should be imported in barrels, as the duty is about half that of bottled wines. At present the chief drawback to an extended sale of California wines and brandies in Mexico is the cheaper sea freights from Europe. From Bordeaux to the city of Mexico freight is 50*s.* per ton, while from San Francisco to Eagle Pass, on the frontier, the rate is 1 cent per pound in carload lots and 3 cents on smaller shipments.

MACHINERY.

Machinery of all kinds moved by steam, electricity, water, or animal power is free of all customs duties. Detached portions of machinery for repairs or additions are also free, even if imported separately, when it is evident such portions can not be applied to other uses. Also supplies, such as belting, packing, tools, lubricants, etc., can be imported free when accompanying machinery and in quantities not to exceed what is indispensable to

set up and start the machinery for an experimental trial. Larger amounts of belting, tools, lubricants, etc., or when separately imported, must pay duties.

All agricultural implements, such as plows, harrows, rollers, mowers, thrashers, etc., are free of duty and are exclusively from the United States. Apparatus and labor-saving machinery for industrial, agricultural, mining, and art purposes moved by hand or foot power, by means of cranks, levers, hand wheels, etc., are not included in the free list, but are subject to a duty of 2½ cents per pound gross weight. In other words, such implements are classed as workmen's tools.

Sewing machines are in almost general use. In fact, no other labor-saving device has received so universal adoption. Sewing machines are everywhere, more commonly in the poor man's hut than in the rich man's mansion. Enter an adobe or thatch house having a dirt floor, no windows, and one hole for a door, and you will find a sewing machine. There is hardly a town of any importance but has one or more agencies of American sewing machines. These agents sell machines on the installment plan, and thus even the poorest can buy. Agents of long experience assure me that losses from selling on the installment plan are rare, as the people are honest. The German imitations of American machines have not found favor in Mexico, although sold very cheap. Our American sewing-machine agencies so thoroughly control the field and are so enterprising that nothing can be added.

In agricultural implements the people need education. Many a poor Mexican wearily and ineffectually turns over his rich soil with a crooked stick pointed with a bit of iron, because he knows nothing of the American plow; this is also true of all agricultural implements, from the simplest tools to the power machines. The field is very large and practically virgin and will be free from foreign competition. The advantages of using our many agricultural devices for improved cultivation and labor saving must be demonstrated to these patient, conservative people. In towns that are centers of large agricultural areas our American firms should establish depots of agricultural implements and practically demonstrate all the manifold advantages from their use. The more expensive implements may be well sold upon installments, as are sewing machines, the first payment to cover freights, duty (if any), etc. In no other branch of trade with Mexico are larger inducements offered to American enterprise than in the introduction of farm implements and machinery, and no field has been more neglected.

Saws, bolts, nuts, and rivets are chiefly from the United States, but with a fair European importation. Chains and files come from England and Germany, because cheaper. Sugar machinery and hoisting apparatus are from the United States.

MUSICAL INSTRUMENTS.

Mexicans are very fond of music, and musical instruments, principally guitars, are seen everywhere. Pianos, organs, guitars, mandolins, and banjos are somewhat imported from the United States, and also from Europe.

It is difficult to compare the pianos of European and American make. European pianos, as a rule, are lighter, cheaper in first cost, and, with the duty of 50 cents per kilogram, are much cheaper than the heavier American pianos. In price, European pianos average 25 per cent cheaper than American pianos, but a dealer of large experience assures me that the American pianos hold their tone and withstand climatic influences so vastly better than those from Europe that the American piano is far the cheapest in the long run. Pianos, of course, are to be considered as luxuries for the rich; but many persons wish pianos for their families who are unable to make a total cash purchase, and it is believed the same plan adopted by sewing-machine agents would add largely to sales. Ownership remains with the seller, and the buyer at first payment reimburses the seller for outlay for freights and duty, which is often a matter of $200. It will readily be seen how little risk the seller incurs. A very inferior, cheap piano comes from Germany, but it loses tone rapidly and deteriorates.

Good guitars come from the United States, cheap and poor ones from Germany.

The demand for band instruments is limited. Mexican military bands are supplied with French instruments. Contracts to supply the Mexican army might be secured.

Few churches in Mexico have good organs. As most churches are too poor to stand the expense, large firms able to make arrangements for time payments might sell a number of church organs.

It will require judicious advertising and traveling over the country with samples of small instruments before a market can be established for American musical instruments.

PAINTS AND OILS.

The duty on oils, paints, varnishes, and painters' utensils and supplies has been considerably reduced.

Paints should be shipped ready mixed and packed as light as possible, as duty is upon gross weight. Oils for mixing paints pay double the duty imposed upon mixed paints.

Painters' brushes pay now 2½ cents per pound, and only best grades should be shipped. Importations for all the northern portions of Mexico are exclusively drawn from the United States.

Importations of illuminating oils are confined to crude and refined petroleum from the United States. Two American companies have established refineries in Mexico and have a virtual control of the trade. They import crude oils from the United States in tank cars, and have agencies in all the principal cities of Mexico. The high duty upon refined coal oils, gasoline, etc., makes direct importations too costly. These companies also produce lubricating oils. It will be seen that the field is now well covered by American companies.

Fish oils are imported to a limited extent for use in miners' lamps, and comes from the United States. The duty was formerly about $2 per gallon, but has now been reduced to 40 cents per gallon.

GLASS AND GLASSWARE.

Plate glass has so far been mostly imported from Europe on account of cheapness and freight rates. Until recently the reputation of European plate glass has been favorable to larger importations than from the United States; but this is all changed now, and our plate-glass manufacturers have only to meet European prices and secure as low rates of freight to entirely control the trade in Mexico, providing always they work to secure it. The duty is 10 cents per pound gross weight on plates of 39 inches in length or width and about 7½ cents per pound for larger sizes. As no allowance is made for breakage and as duty is levied upon gross weight, it is evident that packing should be as light as is consistent with safety.

Window glass of an inferior quality is made in Mexico, but American glass is now more widely imported. Glass in houses is almost a luxury. Many houses in Mexico are without a single pane of glass. The duty is the same as for plate glass.

Of table glass and glass for druggists' use there are no manufactories in Mexico. The duty of 20 cents per kilogram gross weight makes glassware of all kinds very expensive. Preference is given to lighter weights. This line was, until recently, entirely from Europe; but now some orders are placed in the United States, because some enterprising American firms have sent out agents and distributed catalogues well made up and only lacking full data as to weights to be complete. This line affords a good field and should be worked up.

Crockery, china, and porcelain are now mostly imported from Europe. The duty of 15 cents per kilogram gross weight applies to plain and decorated ware. As the consumption is large, our manufacturers should pay more attention to this line.

Lamps and fittings are exclusively from the United States, on account of the latest improvements being American.

Plated lamps of metal pay duty upon the metal with which they are plated. China and glass lamps pay on china and glass.

Bottles for beer, wine, ginger ale, and soda water are in large demand. There are no home products, and supplies are wholly drawn from imports. The duty on bottles will be removed May 1, 1892, and should largely increase importations, and this possibility should receive attention.

Lanterns can now be shipped in cases without paying duty upon the packing.

Electric-light plants are now well established in most towns of any size, and it will be well for manufacturers of electroliers and other appliances for electric lighting to send their illustrated catalogues to the local companies or to hardware dealers.

PAPER AND STATIONERY.

The tariff in force since November, 1891, has reduced the duty upon plain paper of all kinds and largely increased the duty upon paper with

printed or engraved headings and upon blank books. As the prices of American papers have been greatly reduced, there is now a chance, for the first time, for American paper to enter this market, entirely controlled by European importations at present. The duty is upon weight, exclusive of packing; and hence for the Mexican trade paper should combine lightness with strength and smooth surface. Paper admitting of writing upon both sides is preferred. As there is a difference of duty of nearly 2½ cents per pound in favor of unruled writing, bill, and note paper as against ruled, the former will generally be preferred. Water lines are not considered as constituting ruled paper.

The high rates of interior postage cause light-weight writing paper to be in vogue. Envelopes should also be light and strong and colored (generally blue tinted) to prevent writing from being read through the thin envelope. A kind of paper very much used in Mexico is the so-called "papel ministro," used for all official documents and correspondence. In dimensions it corresponds to our foolscap, but size may vary slightly, as dimensions are not fixed by law. This paper should be of medium weight, unruled, and finished to admit of writing on both sides of sheet. Large envelopes to contain this paper when folded once will be in demand. It is believed our paper mills could supply satisfactory grades of this official paper, of which the consumption is very great. Samples can easily be procured from the departments, or any United States consul can mail samples.

A paper mill is in process of construction near Mexico city. The question will be what grade of paper it will manufacture. If suitable for printing purposes, the importations will be considerably reduced, as hitherto only wrapping paper of poor quality has been made in Mexico.

The paper manufacturer in the United States will do well to make inquiries as to sizes mostly used for newspapers. Newspapers are smaller in Mexico than in the United States. The largest may be 16 by 24 inches and the average size about 12 by 16 inches and even less.

Cardboard should have an increased demand, since the new tariff taxes visiting cards heavily, and they will be printed and engraved in the country.

Paper bags with cuts, name of merchant, or other advertising matter can not be imported and pay the duty on the paper alone.

Wrapping paper of straw and striped colored paper are in good demand, the latter especially. It should be as light as is consistent with strength.

Hitherto the excessive duties have limited the use of wall papers to the wealthy. The new duties of about 5, 10, and 25 cents, according to grade, should increase the demand. Cheap wall papers in bright colors and flowered designs are preferred and will find a good sale.

Pasteboard and colored paper, marbleized paper, and imitation leather for bookbinding will have ready sales.

It is impossible to state rules or make suggestions covering all cases, but, bearing in mind that paper in its many manufactures pays duty by weight, the chief requirement for Mexican trade is strength united to highest degree

of lightness possible. Another point is to adapt size to the use paper is for in all well-determined cases, thereby avoiding paying duties upon an excess of paper. A few questions of the buyer as to sizes and grades he can best use will secure the desired results.

JEWELERS' WARES.

Although European watches are chiefly imported, because cheaper, American watches are steadily gaining in favor, because their superior quality is becoming known. There are many more American watches in Mexico than statistics of importations will show, because the tariff permits a person to bring in two watches free if worn upon the person, and there is much travel daily to and fro over the frontier between the United States and Mexico. Solid-gold watches and those having filled cases are classed together under the tariff. The duty is not excessive, and will average about 10 per cent of cost. Complete watches pay by piece or number, and the duty ranges from $1 to $14 each. As a rule, very large watches are not in favor; hunting cases are preferred. American watches have been but little pushed in Mexico, and the field may well receive more attention.

Clocks of American make are now most commonly used, at least in the northern part of the Republic. Alarm clocks are favorites. Trade in elaborate and ornamental clocks of high price is limited, but a large trade in cheap timekeepers is possible. Metallic cases and keyless clocks will best suit the market. The duty is about 38 cents per pound net.

Toys and notions are principally from Europe. German toys especially are found in all towns where a German is established. Some special novelties from the United States take well, but the field is limited.

Solid silverware is little used. Silver-plated ware is now imported from the United States. Our standard and best-known grades are gradually and surely winning a place alongside of the best grades of European plated ware. This field deserves more attention than has been given it by our silversmiths. The duty is about 75 cents per pound, and is not excessive.

Jewelry is at present almost exclusively from Europe, either solid or cheap imitation. Some American manufacturers of rolled and filled jewelry, especially watch chains, are introducing their goods with success. The drawback is that such pieces pay the same duty as solid gold, and the duty is by weight. In case of watch chains, it is suggested that the links be made tubular instead of solid, and thus a saving of one-third the weight can be effected without sacrificing strength.

Mexican jewelers are doing fine work in gold, silver, and filagree. They work so cheaply that it will be hard to compete with them when most of the work is handwork.

WEARING APPAREL.

Ready-made clothing is heavily taxed, and, as a rule, finds but little favor outside of the free zone. To the ordinary Mexican, even of the middle class, ready-made clothing suggests the ill-fitting garments manu-

factured in Germany. These garments are rotund at the waist and deficient in length, and generally illy adapted to the trim, lithe Mexican figure. The tasteful and well-shaped ready-made garments now made so cheaply in the United States could have a very great sale if the tariff was less burdensome. Under the present tariff no trade can be built up.

Underwear of better grades comes almost exclusively from Europe; common grades are made in Mexico.

Neckties are largely made up in Mexico city from piece goods of European importation; the balance of the supply comes from Europe, because it is cheaper.

American all-wool hats are growing in demand and are superior to European hats of equal grade and fully as cheap. American straw hats are rapidly growing in favor, as evidenced by the increased demand. Caps are but little worn.

Lace shawls, or mantillas, which formerly constituted the sole head gear of Mexican ladies, are slowly yielding to the superior attractions of the bonnet and hat, and Paris modes form the taste and rule the trade.

Gloves are seldom worn, save on formal occasions. They come from Europe, where they are cheaper than in the United States.

Hosiery of all kinds, from cotton to silk, is brought from Europe, where it is so cheap that the comparatively small demand would hardly make competition profitable.

Machine-made embroideries and trimmings are also from Europe, especially from Switzerland and Saxony, and are so cheap as to preclude rivalry.

EUGENE O. FECHET,
Consul.

UNITED STATES CONSULATE,
Piedras Negras, October 9, 1892.

CHOLERA IN RUSSIA.

REPORT BY CONSUL-GENERAL CRAWFORD, OF ST. PETERSBURG.

The introduction of cholera into Russia became at once a question of international interest and concern. I have therefore watched with great care the progress of the epidemic since its entrance into the Empire at Samarcand, whence it came rapidly to Bakoo, Tiflis, Astrakhan, and thence up the Volga into the interior. I have carefully noted the measures adopted by the Russian Government in the several places of importance visited by the epidemic to combat the disease and reduce its ravages if possible to the minimum. I have studied the work of the sanitary officials, as well as that of the medical corps of the Empire, and I believe it to be my duty to make a report to the Department upon the measures taken against the epidemic in Russia, especially as cholera is threatening to invade the United States.

GOVERNMENT MEASURES AGAINST CHOLERA.

It is now believed by the medical authorities that an effective quarantine might have been established at Astrakhan, on the Caspian Sea, sufficiently effective, at least, to have prevented the epidemic from going up the Volga and thus infecting the interior of the Empire.

The uncertainty of the good results of quarantine at this point, coupled with the fact that the local authorities were not well prepared for such a quarantine, resulted in leaving the doors of this important city open to the unwelcome visitor. As soon, however, as cholera broke out in Bakoo the Government built barracks at Astrakhan for its treatment, appointed a sanitary service, and detailed officers to keep watch day and night for choleraic patients, who became personally responsible for the transport of all such cases to the barracks. It was the plan of the Government to enforce a rigid system of isolation against the spread of the epidemic; this plan soon proved to be impracticable and, in fact, impossible, due, it is claimed, to the influence of the masses, who were unwilling to assist the authorities.

The epidemic gradually spread inland through the towns of the Volga basin and had reached Nizhnee-Novgorod before the authorities were able in any marked degree to check its ravages. Here his excellency Baranoff, governor of the province, took the matter rigidly in hand and acted as a dictator in all matters touching the epidemic. Governor Baranoff decreed that all persons arguing that the disease was not an epidemic of Asiatic cholera and all persons in any way opposing the orders of the sanitary commission and of the doctors should be immediately arrested and imprisoned. He also decreed severe punishment to all persons found guilty of spreading alarming and exaggerating reports of the disease. He organized a very systematic plan of disinfection, the first and foremost of which was the absolute cleansing of the city. Public streets, sewers, public buildings, as well as all private houses in the city, were under the strictest surveillance, thoroughly cleaned, and disinfected with either carbolic acid, bichloride of mercury, ferric sulphate, dry heat, steam, or boiling water. Under the sanitary laws of Governor Baranoff a rigid inspection of all classes of food stuffs, including water and milk, was strictly enforced. Articles of food believed to be especially liable to carry infection, such as mushrooms, berries, caviar, especially unclean cabbage, fish not freshly killed, all fruit and vegetables not absolutely fresh and clean, were gathered up by the authorities and summarily destroyed.

With regard to choleraic patients, a rigid system was enforced to prevent contagion. All the clothes of such patients were immediately burned and new suits given them by the local authorities. The bodies of the dead were immediately buried unwashed and without funeral rites, an especial burying ground having been devoted to such service. Every house in which a patient may have been taken ill from cholera was thoroughly disinfected, hot water, steam, or dry heat being used wherever practicable; this in addition to the general disinfection of all the houses in the city.

I may add here that, based upon observation, experience, and practical tests in the present epidemic, the medical authorities of the highest standing in Russia now affirm that disinfection, as generally understood and practiced, is of little or no practical value, excepting such disinfection as properly comes in the domain of thorough cleanliness. These medical authorities declare that the system of trying to kill the bacteria of cholera by any form of chemical disinfection is of little or no avail. It may be interesting to note that the experts in cholera in Russia look upon the number of flies in a house or locality as indicating the amount of danger from uncleanliness in an epidemic of cholera. Flies have been found to be infected with choleraic bacteria, and therefore are believed to be prominent agents in the spread of the disease. It is the opinion of the medical experts who have studied cholera in Russia that boiled drinks and thoroughly cooked foods are a safeguard against cholera. Thorough cleanliness, thoroughly boiled drinks, and thoroughly cooked food stuffs may be regarded as the present motto of the sanitary and medical commission of Russia.

In addition to the preventive methods enforced by Governor Baranoff against cholera, as mentioned above, a very systematic plan was organized on all the steam and canal boats, railway trains, and trams to prevent as much as possible the spread of the epidemic. All trains were ordered to carry boiling water, as well as boiled drinking water, for the use of the passengers. Upholstered cars were covered with oilcloth and often with linen slips, which were removed at the end of each trip, washed, and reboiled. The closets and washrooms of each car were thoroughly cleaned by boiling water for every trip and disinfected with carbolic acid. A cholera car, thoroughly equipped for the emergency and attended by a physician, was attached to each train. Similar precautions were taken on steam and canal boats and on tram cars.

The results of the rigid practice organized and carried out in Nizhnee-Novgorod by Governor Baranoff proved to be eminently successful. Therefore, a similar line of sanitation was adopted in Moscow, and with excellent results. Since I have been in Russia I have often heard it remarked that Moscow is an unclean city; but the small number of deaths from cholera in the present epidemic would seem to argue to the contrary. I had occasion to visit Moscow on the outbreak of the cholera there, and I particularly noticed a very great improvement in this particular since my former visits to that place. The entire city was clean and, as the prefect of Moscow personally assured me, was in excellent condition to combat the epidemic. It is a matter of common surprise that cholera did not assume a seriously epidemic form in that city, due, it is believed, entirely to the rigid precautions taken with reference to cleanliness, food, and drink.

In St. Petersburg a similar line of precautions was promptly undertaken and carried out. Gen. von Wahl, the prefect of the city, was as untiring as he was thorough in preparing the city in advance of the outbreak of the epidemic, and I may add that long before the first case appeared in the

city everything was in readiness for the enemy. The much-loved mushrooms, stale cabbage, caviar, berries, and poor fruit were mercilessly dealt with. A thorough watch was set over the market places, fish stands, fruit and vegetable stores, meat and milk shops, and everything not absolutely beyond suspicion in the way of food stuffs was confiscated and summarily destroyed. Thanks, it is believed, to the faithful carrying out of both the letter and the spirit of the orders of Gen. von Wahl, the present epidemic has assumed only a mild form in St. Petersburg.

TREATMENT BY THE RUSSIAN PHYSICIANS.

I have personally visited the cholera hospital of this city, and I have been greatly pleased with the arrangements for the comfort and treatment of their patients. All of the appliances and instruments are of approved modern designs; the hospital conveniences, as well as the care of the sick, will compare very favorably with those of the United States.

Nursing in the cholera hospitals in St. Petersburg is under the supervision of the sisters of the Society of the Red Cross. There are two classes of hospital attendants: one class composed of men nurses, whose duty it is to look after the more laborious work of the hospitals; the other class is composed entirely of women, who attend to the more delicate services and who are required to keep the hospital in perfect order, besides serving as assistants to the male nurses. There are male nurses in charge of the bathrooms, who receive the patients, bathe and dress them, and place them in the hospital beds of the different wards. The nursing, I am able to say from personal observation, is excellent.

The medical treatment of cholera in Russia in general is essentially the same as that practiced in St. Petersburg. The basic idea of this treatment is to assist as far as possible that organ or function which is most seriously affected by the disease. The especial features of this treatment consist in the subcutaneous injection of salt water, following the method of the Italian physician Cantani. Another measure is the introduction of a solution of tannic acid, properly diluted, into the bowels direct. In order to make this treatment more easily understood by the general reader, I will follow an average patient to the cholera hospital and describe the treatment as practiced there. This patient is taken sick with cholera, not as suddenly as generally supposed, and, after much persuasion by his friends and relatives, he is finally reported to the authorities. In this city there are police cholera stations, in each of which there are special police physicians, whose duty it is to assist in every case brought to their notice. The patient thus reported to the police station is sent directly to one of the cholera hospitals—generally against his own will and often, indeed, too late for effective treatment. The police physician remains behind and superintends the disinfection of the apartments of the patient according to prescribed methods. At the hospital the patient is first taken to the bathroom of the ward to which he is assigned, undressed, and placed in a bath tub of water somewhat warmer

than the temperature of the body, where he is kept immersed for a period of ten to fifteen minutes, after which he is dressed with clean linen shirt and drawers and put to bed. On his way to his bed he is temporarily wrapped in woolen blankets. He is then examined by the ward physician, who carefully takes his history and makes notes of his condition, something as follows: John Jones; age, 40; married, wife and children; garden laborer; residence, No. 16 Peski, St. Petersburg; sick three days before coming to hospital from diarrhea, pain in back, headache, loss of appetite, slight nausea; skin warm; temperature, 1° below normal; pulse, weak. The following will probably be the treatment: Salol, 1 gram at a dose every three hours, with subcutaneous injection of solution of salt. The diet will be boiled milk, bread, and tea. It should be stated here that everybody drinks tea in Russia; it is, in fact, the national drink. The salt water used in this injection will be about 1 liter of a one-half of 1 per cent solution. This solution is prepared by the druggists as follows: Distilled water, sterilized by heat, with salt enough added to make a solution approximating as near as possible the plasma of the blood. This solution is kept in bottles such as are used in laboratories and stoppered with sterilized cotton. When the solution is to be used, its temperature is raised to blood heat by immersing the bottle containing it in hot water. A large glass-barreled syringe with a needle of about 5 inches long is used in making the subcutaneous injection. The site of the puncture of the hypodermic needle is generally in the abdominal wall to the right and left of the umbilicus, one-half of the quantity being injected into either side. In the course of from six to ten hours the salt water is completely absorbed, as shown by the subsidence of the swelling. Not infrequently the injection produces considerable inflammation and, rarely, putrescence, due to some unavoidable imperfection in the operation. The value of this method is in doubt even at the hospitals here; but it is believed to afford temporary relief at least to the patient, and apparently improves the circulation and probably influences favorably the diarrhea and vomiting. This so-called method is under rigid trial in this city, and I should not be surprised to find it finally discarded. The same may be said of the internal use of salol in these cases, a chemical product of considerable reputation and merit in other instances and harmless. This preparation is extensively used throughout Russia, perhaps in a large measure due to the fact that its chemical origin is St. Petersburg, whence it has traveled around the world. The diet, as mentioned above—namely, milk, bread, and tea—has proved to be entirely satisfactory.

At the next visit of the physician some hours later the patient will probably be worse, and further evidence of blood poisoning be manifest through convulsions and vomitings, with skin cold, kidneys inactive, and with septicæmia if the case is grave. The treatment is now changed, and subcutaneous injections of diuretin are made with the hope of forcing, if possible, the kidneys to act; bismuth and opium to relieve the vomiting and a hot-air bath to bring up the temperature of the surface of the body are also used.

The diuretin as thus used is also undergoing a thorough test here, and I should not be surprised at seeing its efficacy in these cases seriously questioned. The bismuth and opium treatment is too well known in the United States to require further mentioning here. I would like to add, however, my personal testimony to the great efficacy of the hot-air bath, especially in cases in the algid state. I have seen this used in the hospitals here in cholera cases, and, I believe, with prompt and permanently good results. A very simple apparatus can be easily constructed in any household for the application of hot air in such cases. A frame may be placed on the rails of the bed, on which may be spread ordinary blankets well tucked in at the sides and around the patient. Underneath the blankets on one side of the bed may be inserted one end of the elbow of a small stovepipe, while the other end is placed over the chimney of an ordinary kerosene lamp to receive the heat of the flame, thus sending a current of hot air under the blankets of the patient. A long thermometer is thrust through the blankets in contact with the patient, and the temperature is thus regulated. This method of combating the cold stage of the disease is now in general use here and grows in favor with each application. Many patients are believed to have been saved by this treatment alone. I personally recall one case which I regarded hopeless, and which was immediately improved by the hot-air bath, and who finally recovered.

At the next visit of the physician our patient will apparently be somewhat improved, pulse stronger, body warmer, but with rice-water diarrhea and more profuse and frequent. The treatment now will probably be an injection into the bowels of about 1 liter of a solution of tannic acid of the proper strength. This will probably be the last prescription, as the patient with symptoms as described above will probably soon pass into the comatose state, in which further medical aid will be of no value. This use of tannic acid is old, and, of course, well known to the average physician, and has been given in these cases on the supposition that the media of the germs of cholera are of alkaline reaction, the injection being thus intended to counteract the choleraic poison. Another reason for using tannic acid is its well-known astringent qualities. Both of these theories are being seriously questioned by modern investigation in cholera cases.

Of course, other treatment is given, as the symptoms of the several patients differ. Beta-napthol mixed with bismuth is sometimes given instead of salol for the diarrhea stage, and sometimes other antiseptics; cocaine is also given with considerable success, apparently to relieve vomiting, and in doses of about 3 drops of a 10 per cent solution. In cases coming early to the hospital, when not violently ill, a dose of 30 grams of castor-oil is given. Hypodermic injections of morphine are used to assuage the cramps and colic pains. The patients are also given, as far as practicable, hot-water baths daily. In some cases a liter of salt solution has been injected directly into the veins of the patient at the ankle, but the method is now regarded as both dangerous and ineffective.

The essential features of the treatment of cholera as practiced in Russia in the present epidemic may be summarized as follows: (1) Hot-water and hot-air baths; (2) subcutaneous injections into the abdominal wall of 1 liter of a one-half of 1 per cent solution of common salt; (3) injection into the lower bowel of tannic acid and opium; (4) hypodermic injection of diuretin for inactive kidneys; (5) internal administration of salol, bismuth, betanapthol, opium, cocaine, and castor oil, as respectively indicated; (6) hypodermic injections of morphine.

GOVERNMENT INVESTIGATIONS.

I take great pleasure and pride in calling attention to the fact that a young physician of the United States, because of his eminently successful career in the Oldenburg Institute of Experimental Medicine, in this city, was selected by the Russian Government to go to Bakoo, erect a laboratory there, and conduct a series of scientific experiments relative to the cause of cholera, and more especially to its locus in the human body. The name of the physician above referred to is Arthur G. Blackstein, of New York city, a graduate of Cornell University, where he received the degree of B. A. in 1882, whence he went to Leipsic and received the degree of M. D. from the medical university of that place in 1887. Returning to the United States, he was made a fellow in pathology of the Johns Hopkins University in 1890–'91. One year ago he came to the Oldenburg Institute of Experimental Medicine, in this city, where he has devoted his entire time to the study of disease-producing bacilla and kindred studies. On the breaking out of the epidemic in Russia, Dr. Blackstein was thought to be the best equipped for conducting a series of scientific investigations on cholera. He was therefore, by special recommendation, made an active member of the Institute of Experimental Medicine of St. Petersburg, and was immediately intrusted with the important mission above mentioned.

According to Dr. Blackstein, there have been and are still two very different methods of pursuing the scientific study of cholera, one of which has been termed epidemiological method. The collecting of statistics and observations as to the influence of soil, air, water, and plant upon the course of the epidemic belong to this method. In this way much valuable information has been collected by Pettenkofer. The second method is known as the bacteriological method, and was successfully inaugurated by Koch. The discovery of a specific germ was a great step in advance in the scientific study of cholera. The majority of observers agree that the so-called comma bacillus is to be found only in the excretions of cholera patients, and that in typical cases it is always to be found there. At the cholera laboratory in Bakoo Dr. Blackstein examined a large number of cholera patients with reference to this question, and he has assured me personally that his observations have convinced him of the correctness of this view.

The great German Pettenkofer claims that a certain condition of the soil, as yet unknown, is a necessity for the development of cholera. At any rate, he claims that the biological properties of the comma bacillus are in-

sufficient in themselves to account for the origin of the cholera epidemic. Pettenkofer's ingenious and masterly work is valuable and important—a remark which would seem superfluous did I not think that it is being disregarded by American workers in this line of research.

Koch, on the other hand, claims that an infection of comma bacillus, even when the cultures are pure, will produce cholera, regardless of meteorological conditions. It is interesting to note that in Dr. Blackstein's investigations at Bakoo he concludes that Koch's work is correct, but that his logic is faulty. Dr. Blackstein argues that Koch's logical inference should be this: The comma bacillus, therefore, plays a part in the cause of Asiatic cholera. Dr. Blackstein would ask the question, what part do Koch's bacteria play in the causation of cholera? and at the same time would state in so many words what the aspect of the scientific study of Asiatic cholera is at the present day. He says that if workers in this line of study, especially those in England and India, would unite in the solution of this problem, they would do more good than in persisting in an effort to belittle the value of Koch's great discovery.

Dr. Blackstein admits that the Russian Government has made great efforts to check the progress of the epidemic, and in this has been generally successful, especially in the larger cities. But in those towns in which the authorities apparently waited for the decision of the bacteriologist before recognizing the existence of Asiatic cholera in their midst much harm was unintentionally done. He claims, what every skillful physician must admit, that the diagnosis of Asiatic cholera can be unerringly made without the aid of the microscope, and should be made without it in the actual treatment of this disease.

Dr. Blackstein concludes that the phrase "killing bacteria" can only have practical interest to those people whose business it is to disinfect places and things. The idea, he claims, which the physician who deals with cholera patients should be impressed with should be that the bacteria can be made harmless. He is fully convinced, as a result of his own experiments and studies in the Government laboratory at Bakoo, that the direct scene of action in cholera is the intestinal canal. A disinfection of this canal is, of course, impossible; but, fortunately, it is unnecessary, as the medical profession possesses means to reduce what is known as intestinal putrefaction to a minimum.

Another very important conclusion of the Bakoo investigations is that, in order to contract Asiatic cholera, one must, so to speak, either eat it or drink it; that is to say, the cholera poison, be it the comma bacillus or otherwise, must be taken into the stomach in its active state in food or in drink. A still more important result of those investigations is that cooking the food and boiling the drink render the cholera poison innocuous. If these conclusions are sound, we have a certain safeguard against an epidemic of cholera. Dr. Blackstein approves of the use of salol, bismuth, and beta-napthol, but concludes from his observations that the tannic-acid injections

into the bowels, as well as hypodermic and introvenous injections, do harm without doing any good. He favors a thorough irrigation of the gastro-intestinal canal, and affirms that if the physician would treat the choleraic intestine with the same delicacy with which a surgeon treats a wound he would meet with greater success.

It would be beyond the aim of this report to go into the details of the work of the Bakoo cholera laboratory, especially as Dr. Blackstein assures me that he will make an elaborate exposé of that work for the medical world in due course. I have therefore only intended to give a general summary of the conclusions reached in the Bakoo investigations. I simply wish the public at home to know that, if proper care is taken with their food and drink, there need be but little apprehension over cholera in their midst.

TREATMENT OF CHOLERA BY IRRIGATION.

The method of treating cholera patients by irrigation of the intestinal canal was introduced at the Obuchoff Hospital, in this city, September 3, 1892, by Elmer Lee, who came here properly fortified with testimonials for the express purpose of obtaining permission to treat a number of cholera patients by this method. By way of introduction, I may say that Dr. Lee is resident physician of the Palmer House, Chicago. He is a fellow of the American Academy of Medicine, member of the American Medical Association, and was a member of the committee of revision of the United States Pharmacopœia in 1890. On arriving at St. Petersburg he was at once put in communication with the medical corps of the cholera hospital, to whom he stated the object of his visit and explained in detail his methods of cholera treatment. He gave the results of his experience in Chicago in the treatment of enterocœlitis by the irrigation method. As cholera is also an enterocœlitis, and as the method proposed by him seemed reasonable, physiological, and harmless, it was decided by the hospital corps to give Dr. Lee a fair trial. He was accordingly given one case, which was admitted to be grave. This case was promptly treated, but with imperfect apparatus, and on the second or third day was convalescent. He was then given two other cases, and they recovered. He was then given four, and sooner or later he had treated in all twenty-seven cases personally, twenty-four of which recovered, showing a mortality of only 12 per cent. I have personally visited these patients at the Obuchoff Hospital and have made clinical notes in reference to them; I have talked with several physicians of the hospital staff and have received from them only words of the highest praise over the results obtained. Before giving an explanation of this method, I will give a brief clinical report of the twenty-seven patients treated by Dr. Lee as I saw them, purposely abbreviating the same by the omission of names and other uninteresting data. Of course, it is understood that the cholera patients treated in public hospitals belong almost invariably to poor classes. It has been estimated that only about one-third of all cholera cases are taken to the public hospitals in this city.

(1) Obuchoff Hospital, St. Petersburg, September 3, 1892. Patient (cholera), old man; had already been treated by the usual remedies, but did not convalesce; intellect dull, pulse weak, skin cold and blue, diarrhea profuse and was a prominent symptom. This patient was treated in the presence of the physicians of the cholera hospital and, because of his extreme weakness, irrigation was performed in bed. Five liters of strong Castile-soap suds injected into the colon through a flexible rubber tube 26 inches long; irrigation was continued until the outflow was clean. The patient promptly improved. A similar treatment was given the next day, which was followed by convalescence, and in about a week thereafter he was discharged cured.

(2) Patient new arrival; middle age; severe cholera poisoning; skin cold and cyanotic, pulse feeble, kidneys inactive. This patient promptly recovered.

(3) Boy, 16 years old; admitted September 6; skin cyanotic, pulse feeble, respiration short and heavy, much diarrhea and vomiting. The case was admitted to be grave. The injecting tube, which is flexible, was carefully passed the entire length of the transverse colon and 2½ gallons of strong Castile-soap suds were injected. The boy was then bathed and placed in bed. On the following day his symptoms had so much improved that it was thought unnecessary to give him further treatment. Prompt recovery.

(4) Patient new arrival; in comatose state when admitted. Although treated, the patient died the same day. Post-mortem revealed only the usual picture of cholera septicæmia.

(5) Man of middle age, large and strong; had been sick two days before arrival; profuse diarrhea and vomiting, skin warm, pulse moderate; irrigated once; prompt recovery.

(6) Man of medium size, greatly emaciated and pale; had been sick three days before arrival; rice-water diarrhea and vomiting; pulse extremely weak. The patient was irrigated twice the first day and twice the second day. He recovered.

(7) Boy; one day sick; diarrhea, vomiting, and convulsions, with cramps and severe colic pains; pulse weak, intellect dull, skin blue. After the first irrigation the abdominal pains were relieved. There was similar treatment the second day, followed by recovery.

(8) Young man; skin very blue, surface cold, labored breathing, pulse very feeble, profuse diarrhea, and vomiting. He was irrigated once the first day and once the second. There was prompt recovery.

(9) Old man; very sick; two treatments; recovery.

(10) Middle-aged, black-haired peasant; exhausted by several days' diarrhea and vomiting; abdomen collapsed; cyanotic; unconscious; pulse hardly perceptible; two irrigations, followed by recovery.

(11) Man, middle-aged, gray hair; skin very cold, anxious expression, benumbed intellect, very severe diarrhea, but little vomiting, skin very blue; irrigated once the first day; died the next. Only the usual evidences of cholera poisoning were revealed in the post-mortem, at which I was personally present.

(12) Man with small features, about forty years old; had been sick three days before arrival; skin warm, pulse good, diarrhea and vomiting, with colic pains. There were two irrigation treatments, followed by recovery.

(13) Patient a cook; short, heavy-set blonde; had been sick three days; very severe diarrhea, but little vomiting, mind dull, seldom spoke, difficult to arouse, skin blue and cold, abdomen collapsed; irrigation. The patient died that night. The post-mortem revealed only the usual evidences of cholera.

(14) Young man, acute case; one day sick; diarrhea and vomiting, with cramps; one irrigation; recovery.

(15) Old man; excessive vomiting, great prostration, pulse weak, skin cold and blue, labored breathing. After the first irrigation the abdominal pain was relieved. He recovered.

(16) Case complicated with chronic gastroenteritis of severe character; vomiting and purging. The patient recovered.

(17) Young man; had been sick several days; frequent diarrhea and vomiting. In this case Dr. Lee was unable to introduce the injection tube into the colon, but performed thorough rectal irrigation with good results. The patient recovered.

(18) Young man, yellow haired; sick one day before arrival; skin warm, pulse good; great abdominal pains and diarrhea. There were two irrigations the first day and two the second. The patient recovered.

(19) Old man; had been some time sick in hospital and would not convalesce. Irrigation removed a large quantity of green, flaky coatings from the bowels, followed by relief and recovery.

(20) Patient sick one day; cyanotic, skin cold and clammy, lips blue, pulse feeble, temperature subnormal; intellect dull; algid state; recovery.

(21) Patient a young man; temperature subnormal, pulse feeble, face and hands cold, skin blue, tongue as usual heavily coated, diarrhea, vomiting, and abdominal pains. The patient was irrigated morning and evening of the first day and recovered.

(22) Young man taken suddenly ill on the street, brought direct to the hospital; profuse diarrhea and vomiting, blue lips, pale, coated tongue. There was one irrigation the first day and one the second, followed by recovery.

(23) Old man; severe pain, excessive diarrhea, greatly emaciated, very weak pulse, skin blue in spots; had been sick two days before arrival; mind dull, respiration frequent and labored. There were two irrigations the first day, followed by recovery.

(24) Boy; had been sick one day; skin blue and cold, abdomen collapsed, violent diarrhea and vomiting, with convulsions. After one irrigation there was marked convalescence and quick recovery.

(25) Man, middle age; sick one day before arrival; pulse almost imperceptible, lips dark blue, eyes dull and heavy, cheeks sunken, abdomen collapsed, skin cold and clammy, severe diarrhea and much retching, intellect

dull. This case was grave and thought to be moribund. The patient was irrigated twice the first day and twice the second, followed by recovery.

(26) Young man, recent case; skin blue and cold, anxious expression, pulse extremely weak, respiration labored, profuse diarrhea and vomiting, with severe abdominal pains. There was recovery after three irrigations, two the first day and one the second.

(27) Man, middle age, tall; face very red, hands blue, skin cold; had been sick one day; profuse diarrhea, but no vomiting, pulse weak, temperature normal. He recovered after two irrigations.

Certainly, I do not wish to intimate that the treatment of the twenty-seven cases of cholera as detailed above is sufficient to establish the permanent value of the irrigation method in this disease. I believe, however, that enough has been done in this direction to demand the careful attention of the medical fraternity and to call for a thorough investigation of this treatment. It is in this spirit and with this motive that I make this report. In this connection, I would say that the physicians of the Obuchoff Hospital, which is the largest cholera hospital in this city, concluded, after seeing the results of the twenty-seven cases above mentioned, that the irrigation method should be given a fair and impartial trial. The chief of the hospital corps therefore assured Dr. Lee, as well as myself, that this method of treating cholera should be put on trial for six months, after which an official report with reference to its value would be published. I would also add my personal testimony to the fact that I happened to call at the hospital a few days after the resolution to put this method on trial and was pleased to see that the physicians were practicing the irrigation method. In fact, I saw a patient under this treatment during my visit. He was unconscious, collapsed, cyanotic, and cold, and I said to the physician that, in my opinion, he could not recover. Two days later I received news from the hospital that this same patient was convalescent.

I trust, therefore, that I may be pardoned for urging in this report that the irrigation method of treating cholera be given a fair trial should the epidemic unfortunately visit the United States.

THE IRRIGATION METHOD.

The treatment of cholera by irrigation is based upon the general belief—and this belief has been intensified by the experiments of Dr. Blackstein, as mentioned in this report—that cholera is the result of some form of poison, be it bacteria or otherwise, which acts on the tissues of the colon and sooner or later poisons the system. This treatment is accordingly very simple, and consists in washing out the bowels, and as high up as possible, with some cleansing and disinfecting liquid that is not harmful. The experiments of Dr. Lee, which have been confirmed by Dr. Blackstein in his special work at Bakoo, go to show that strong Castile-soap suds is one of the most effective fluids for this purpose.

The apparatus used consists of a plain rubber tube about 4 feet long and from one-half to three-fourths of an inch in diameter, or, speaking more tech-

nically, of the diameter of a No. 50 sound of the French scale. This tube can be secured at any medical supply store. It should be flexible, with only sufficient resistance to assist in passing the angle of the colon. In the treatment at the hospital here the tube was passed entirely through the transverse colon in nearly every instance. This tube should taper bluntly at the end, in the exact center of which should be an aperture equal in size to about one-third of the caliber of the tube itself. A glass jar sufficient to contain about 3 gallons and with a common faucet attachment at the bottom is placed on a shelf about 6 or 7 feet above the floor. To the faucet is attached the usual rubber tube, as in the ordinary fountain syringe, the other end of which is properly connected to the injecting tube above mentioned after it has been carefully passed into the colon. The patient, of course, is previously prepared for this operation and placed in position on the irrigation table in the immediate vicinity of the apparatus. The glass jar is then filled with Castile-soap suds sufficiently strong to show iridescence. The faucet is then turned, and the irrigation is begun and continued until the outflow consists of clean soapsuds. The patient is then taken from the irrigation table and placed in a bath of the normal temperature of the body, after which he is properly dressed and put to bed. A second irrigation, as practiced by Dr. Lee, follows the first in the course of from six to twelve hours, according to the urgency of the case. It is claimed that the irrigation of the colon thus thoroughly performed produces sufficient stimulus and reaction to cause the contents of the small intestine to pass freely into the colon, which a second irrigation removes.

In addition to this treatment, Dr. Lee and the physicians of the cholera hospital here favor the washing out of the stomach by the usual method, although this practice was not resorted to in the twenty-seven cases above enumerated. One of the physicians of the hospital, however, has assured me that stomach-washing will be added to irrigation of the colon in the hospitals in cases sufficiently grave to suggest it. It may be noted that of all the patients that I saw under treatment by this method not one offered the slightest objection thereto, but, on the contrary, seemed to think that something was being done for their relief.

Other preparations have been added to the soapsuds in this treatment at the hospital, intended, if possible, to make the irrigation more effective; but such modifications of the injecting fluid need not be discussed here, as they will suggest themselves to the general physician, and especially as soapsuds unmedicated produce equally satisfactory results. It will, of course, be understood that the soapsuds are made with distilled water or water that has been recently boiled.

The internal medication used by Dr. Lee is equally simple. He gave generally hydrogen dioxide (H_2O_2) which is nothing more than distilled water containing an extra atom of oxygen. This he gave every two or three hours and in cupful doses. In addition to this, the patient was given distilled water freely, either hot or cold, as he preferred, in which a little com-

mon salt was dissolved. According to symptoms, however, other remedies were added, such as will occur to the mind of the general practitioner, and which I need not here enumerate.

It may add interest and weight to this report to say that since its preparation I have again consulted one of the principal physicians of the hospital staff, who, after examining it in detail, assured me that it meets with his entire approbation. The same physician desired me to say that the same treatment has been used in dysentery and in simple cases of colo-enteritis since Dr. Lee's departure with excellent results, and that the irrigation treatment is still continued at the Obuchoff Hospital with marked success in cholera.

J. M. CRAWFORD,
Consul-General.

UNITED STATES CONSULATE-GENERAL,
St. Petersburg, October 4, 1892.

CROP SHORTAGE IN FINLAND.

REPORT BY CONSUL-GENERAL CRAWFORD, OF ST. PETERSBURG.

I have been officially informed that the peasants in the northern portion of Finland will suffer greatly for food during the coming winter, because of the fact that prolonged rains in the spring aided by heavy frosts in the autumn nearly ruined the crops in the entire northern half of the country. The Finnish government has already taken measures to aid as far as possible these poor people.

A sample of the bread that they are already eating in the northern part of Finland has been sent to me, and tells a story of hunger and poverty equaled only by that of the peasants of the southeastern portion of Russia during the past year. The local authorities in the grand duchy of Finland admit that a general calamity awaits their people. This seems all the more deplorable when we consider that these same people suffered greatly during the past winter, and that they received no part whatever of the generous contributions sent to this Empire by the United States and other foreign countries for the relief of the hungry.

I am in receipt of information from Uleaborg, situated at the north of the Gulf of Bothnia, to the effect that an early frost has destroyed nearly the entire products of agriculture in all of the northern districts, and that the peasants of the north are already stricken with alarm.

It is a matter of great doubt whether the Finnish government will be able, out of its limited resources, to successfully cope with this distressing problem, involving the comfort and life of nearly 1,000,000 of the Finnish people.

J. M. CRAWFORD,
Consul-General.

UNITED STATES CONSULATE-GENERAL,
St. Petersburg, October 17, 1892.

MEXICAN TARIFF CHANGES.

REPORT BY SECRETARY OF LEGATION DOUGHERTY, OF MEXICO.

I hasten to transmit copy and translation of a decree just promulgated by this Government and published in to-day's issue of the Diario Oficial. The decree relates to the Mexican customs tariff, and effects many important changes therein. These changes consist of very material reductions upon certain items; the placing of one item, *i. e.*, waste and torn paper, pulse of vegetable fibers, etc., used for manufacturing purposes, on the free list; and the removal from the free list and the imposition of a "light duty" upon about twenty items.

The decree discloses, as the reasons for these respective changes, the fact that some foreign merchandise is so heavily taxed in the tariff now in force that its importation has become almost null, the recent depreciation of silver and the needs of the federal exchequer urging that articles of large consumption hitherto free should contribute their quota of revenue.

The decree takes effect on December 1, 1892, as far as concerns merchandise on which the import duties are therein reduced and on January 1, 1893, as far as concerns other merchandise; "provided, in all cases, the same are introduced by the frontier, or the vessels carrying the same to the port of destination enter such port after the hour of midnight of the day just preceding."

C. A. DOUGHERTY,
Secretary of Legation.

UNITED STATES LEGATION,
Mexico, October 18, 1892.

DECREE AMENDING THE MEXICAN TARIFF.

[Inclosure in Secretary of Legation Dougherty's report.]

(1) It being absolutely necessary to confer upon the tariff of the general customs ordinance of the maritime and frontier custom-houses all the character of stability required in connection with pursuits of commerce and industry, it is not prudent to alter the rates of import duties only as experience itself may demonstrate fully the necessity for such modification.

(2) That some foreign goods are so heavily taxed in the customs ordinance tariff now in force that their importation is almost null, on account of the weight of duty, as is evidenced by reference to the statistical tables of imports drafted in the custom-house statements.

(3) That the high rates of import duties produce the result that foreign merchandise, burdened thereby, is smuggled in, to the serious detriment of the public revenues, domestic manufactories, and commercial men of good faith.

(4) The depreciation recently affecting silver has also caused foreign exchange to rise more than 50 per cent. This circumstance resting heavily on the value of foreign merchandise, has rendered difficult the importation thereof and invested with a prohibitive character the high rates of the tariff on imports.

(5) Treating of articles of general consumption wherein the import duties represent a sum in many cases greater than the value itself of the effects, the principles of a sound political system favor the reduction of such rates, in order to increase the consumption thereof, as well as of the revenue itself.

(6) Even treating of articles similar to those manufactured in the country, and which therefore demand certain consideration at the hands of the Government, there exists the same requisite for a reduction of duties whenever the protection afforded to a national industry implies a heavy sacrifice on the part of consumers, and at the same time stultifies the spirit of competition so necessary to the continued improvement of national products in the line of advances in science and new discoveries.

(7) While, for fiscal reasons, it has been deemed requisite to reduce some of the rates fixed in the tariff in force, it has also been deemed advisable, in view of the heavy burdens resting upon the federal exchequer, to require that some articles of large consumption in the Republic, and which have not, up to the present, paid any duty upon their introduction into the country, shall contribute with a light duty, of a character merely fiscal, to the sustenance of the obligations of the nation.

ARTICLE 1. The tariff of the general ordinance of maritime and frontier custom-houses of June 12, 1891, is modified and expanded in the provisions hereinafter specified:

Table showing the tariff as modified.

No.	Articles.	Unit.	Rate.
3	Stud-horses, mares, and colts more than 1 year old	Per head	$15.00
4	Hogs and young pigs	Per kilogram	.02
5	Neat cattle and their young	do	.02
6	Goats and sheep	Per head	1.00
10	Fresh beef, mutton, pork, and fowl	Per kilogram, net	.08
11	Fresh fish, even when preserved in ice	Per kilogram, gross	.02
12	Smoked or salt meats	Per kilogram, legal	.12
23	Animal grease, not specified	Per kilogram, gross	.08
46	Hog's lard	do	.10
166	Leaf tobacco, Virginia	Per kilogram, net	.15
173	Fecula of potato	do	.04
182	Oil of refined cotton seed	do	.10
182a	Oil of unrefined cotton seed	do	.05
191	Indigo	Per kilogram, legal	1.00
306	Steel in round or octagonal bars, for mines	Per kilogram, gross	.01
308	Iron or steel wire, the diameter of which is not less than the number 25, Birmingham.	do	.05
311	Iron wire for fences and hooks for fixing the same	do	.01
312	Iron or steel stone hammers, dies, and shoes	do	.01
313	Plows and plowshares	do	.01
314	Iron hoops, with rivets, for tying bundles and iron-wire clasps for the same purpose.	do	.01
315	Iron barrels	Per kilogram, net	.01
316	Iron or steel cable wire of any thickness	Per kilogram, gross	.01
317	Iron pipes and tubings of any size, tinned or not	Per kilogram, net	.01
319	Agricultural implements of all kinds, such as picks, shovels, axes, etc.	Per kilogram, gross	.01
320	Iron crucibles	do	.01
322	Iron and steel in pigs, filings, or scraps	do	.01
323	Iron (strap, round, square, half round, or flat)	do	.06
325	Iron, perforated, sheets for sieves	do	.01
327	Tin in sheets up to 55 centimeters in length by 40 in width, not stamped or painted.	do	.01
334	Iron or steel wire covered with cotton, linen, wool, silk, or paper	Per kilogram, legal	.12
336	Manufactured goods made of tin, not specified	do	.25
336a	Manufactured goods of iron or steel, not specified, the weight of each of which does not exceed 10 kilograms.	do	.15
340a	Iron stoves for kitchen or for heating purposes	Per kilogram, gross	.05
341	Iron furniture of all kinds, with or without marble tops or mirrors	do	.15

Table showing the tariff as modified—Continued.

No.	Articles.	Unit.	Rate.
359	Common and hydraulic lime and Roman or Portland cement	Per 100 kilograms, gross.	$0.50
377	Plaster and stucco	Per kilogram, gross	.01
441	Panes of glass of all sizes	do	.10
442	Sheet glass for floors, whose thickness may not be less than 0.01 meters.	do	.05
458	Cotton stuffs, crude or unbleached, of plain textures, of not more than 30 threads of warp and woof in a square of 5 millimeters per side.	Per square meter	.07
459	Cotton stuffs, crude or unbleached, of plain texture, when they have more than 30 threads of warp and woof in a square of 5 millimeters per side.	do	.10
460	Cotton goods (painted, stamped, or dyed) of plain texture, when not more than 30 threads of warp and woof in a square of 5 millimeters per side.	do	.10
500	Linen and hemp thread, white, crude or colored, fine or common, in any thickness, in balls, reels, or skeins.	Per kilogram, legal	.12
501	Linen or hemp thread of all classes and colors, in spools	do	1.00
659	Sizing for woven stuffs	do	.05
733	Mineral, artificial, or natural waters	do	.02
742	Waste and torn paper and pulps of vegetable fibers, untinted, for manufacturing purposes, which may be perforated at distances of not less than 10 centimeters.		Free.
743	Paper without sizing or half sized, without satin finish, for the printing of books and periodicals.	Per kilogram, legal	.07
744	Paper without sizing or half sized (white satined) for the printing of books and periodicals; paper of tinted pulp for printing; paper to counterdraw or filter, blotting paper, copying paper, and the thin paper known as tissue (China).	do	.10
745	Paper, sized, for writing purposes	do	.20
746	Paper, rag or brown, and for packing purposes, even when coated with pitch or tar.	do	.05
755	Paper, cloth lined, impermeable paper, and parchment	do	.20
760	Paper for cigarettes	do	.15
761	Paper, ruled, for documents, letters, account, or music, or paper cut for same.	do	.30
787	Pumps and turbines	Per kilogram, gross	.01
792	Cranes and diving apparatus	do	.01
800	Steam engines and their extra pieces	do	.01
801	Machinery and apparatus for any purpose whatever, not specified, and their extra pieces when arranged for other motor not of crank, pedal, or lever.	do	.01
806	Pile-drivers	do	.01
808	Presses for printing and lithographing, type cuts, stones, and other special materials pertaining thereto, not specified.	do	.01
809	Clocks for towers and public buildings	do	.02
845	Detonators of all kinds for explosives	do	.05
846	Dynamite and other explosives, not specified	do	.03
848	Wicks and fuse for mines	do	.03
849	Powder for mines	do	.03
851	Pyroxilin or gun cotton	do	.03

ART. 2. The notes explanatory of the tariff of the ordinance in force, carrying the numbers 103, 250, 251, 252, 253, 254, 260, and 262, are hereby modified in the following form and tenor, to wit:

Note 103.—Fencing wire is made of galvanized iron, as well as its coupling. Sometimes it is formed of two wires twisted into a spiral, into which are inserted at intervals small rosettes formed of iron plates and pointed barbs. At other times the wire is substituted by a galvanized iron tape, with a width of 1 or 2 centimeters, which has also a spiral twist and is fitted with barbs. For the same purpose a double wire is employed, twisted in open spiral, without barb, formed with wires of galvanized iron, for telegraph purposes.

Note 250.—The paragraph 742 of the tariff refers to the scraps which can only be utilized as manufacturing material and to the pulp of vegetable fibers for the same purpose, even

when in sheet, provided they are not tinted and are perforated at distances not to exceed 10 centimeters. The tinted pulps in sheet shall be quoted as beaten card, and those of natural color, when they do not meet the conditions of perforation, shall be also on a par with beaten board or shall be punctured so as to render the board useless for any other purpose; this to be at the option of the parties at interest and at their expense.

Note 251.—Paragraph 743 refers to paper without sizing or half sized, white, designed for the printing of books and periodicals, and whose surface, not being finished, is comparatively rough and not suitable for letters or manuscript documents. This classification embraces as unsized paper such as can not be written upon with writing fluid without spreading the ink, thus spoiling the shape of the characters formed by the pen. Half-sized paper shall include such as can take writing without blur, but whose surface is scratched and the writing on the scratched surface causes the ink lines to spread, in which case the ink forms circles round the original character, sometimes continuous, sometimes in the shape of radii.

Note 252.—Paper without sizing or half sized, to which paragraph 744 refers, as suitable for the printing of books and periodicals, must be white and of finished surface. This classification includes paper of tinted pulp suitable for impressions of covers, etc., of essays, dissertations, etc.; also advertisements, posters, etc., even when the paper is not finished; also paper for filtering purposes, blotting paper, paper for copying letters, and the white and colored paper commonly styled tissue (China); paper for counterdrawing, such as treated with varnish, wax, resin, or other similar substance, acquires a transparency that adapts the same for the purpose of receiving impressions of plans or other drawings. Paper prepared with ferroprussiate to receive heliographic impressions, and material prepared with mucilages or varnishes to receive the impression of plans, etc., come under the same rating as this paper.

Note 253.—Paragraph 745 includes paper sized suitable for writing purposes. Sized paper is that in which the sizing material is mixed throughout so that, should the surface be even scratched, it can be written upon without causing the ink to spread out and blur the characters.

Note 254.—Paragraph 746 includes paper of rags or brown paper, grayish or yellowish, whether of straw or of wood pulp or with streaks of coloring; also paper for packing purposes of whatever color or thickness, such as the yellow manilla, those of gray tint, and those of tinted pulp, even when coated with tar or pitch or finished in satin or sizing; provided, however, they are suitable for packing purposes.

Note 260.—Paragraph 755 embraces papers backed with some cloth to strengthen them, oiled and varnished papers, papers waxed or of rubber for use in press-copy books, and parchment papers of all classes.

Note 262.—This note refers to paragraph 761, and includes all paper cut to a proper size for letters, notices, memoranda, or documents, in single or double sheets, known as "florete" and "ministro" (foolscap and legal), etc., and all ruled and tinted paper for letters, statements, accounts, or music.

ART. 3. To the notes explanatory of the tariff itself are added the following:

Note 306.—This note refers to paragraph 182 of the tariff, which includes as refined cotton-seed oil that which, having been more or less clarified, is of color varying from gold yellow to straw yellow and sometimes of the colorless aspect of refined oils. Attention should not be paid to the existence of sediment, or the lack of transparency, or the turbid character of the oil, but only to the matter of its coloring as indicated.

Note 307.—This note refers to paragraph 182*a* of the tariff, which treats of crude cotton oil as the crude oil, of reddish-brown color, that has not been discolored; even though having been filtered, it may be transparent and not have sediment.

ART. 4. All other notes explanatory not modified by article 2 of this decree shall be and remain in full force and vigor, even in case the paragraphs of the tariff to which they refer have been modified either by reduction of the unit of rate or of the rate itself.

ART. 5. The treasury department shall modify the vocabulary attached to the general customs ordinance now in force in such part as shall be necessary for the adoption of same to the modification and expansion of the tariff as contemplated in the present decree.

ART. 6. This decree shall take effect on the 1st day of December, 1892, as far as concerns merchandise the import duties whereon are reduced thereby and on the 1st day of January, 1893, as far as concerns other merchandise; provided, in all cases, the same are introduced by the frontier or the vessels carrying the same to the port of destination enter such port after the hour of midnight of the day just preceding.

COMMERCE OF MANITOBA.

REPORT BY CONSUL TAYLOR, OF WINNIPEG.

AREA OF THE WINNIPEG DISTRICT.

The Winnipeg consular district, as recognized by the Department, includes the parallelogram of central Canada bounded on the east by the western coasts of Hudson Bay and Lake Superior, on the west by the Rocky Mountains and Alaska, on the south by latitude 49° (or the international boundary between the United States and Canada), and on the north by the Arctic Ocean—an area of 800,000 square miles, with a population of 250,000 civilized and 50,000 aborigines.

DUTIABLE IMPORTS.

The commerce of Manitoba and York will be first considered. The foreign imports for the year ended June 30, 1891, amounted to $1,953,469, returning a revenue of $620,349.60. The relations of the United States and Great Britain to these importations will be shown by the following table:

Table showing the imports into Manitoba and York from the United States and Great Britain for the year ended June 30, 1891.

Articles.	United States.	Great Britain.
Ale and beer:		
In bottles	$16,103	$6,707
In casks	3,035	100
Animals, living:		
Horned cattle	1,535	.....
Horses	25,166	.....
Hogs	1,686	.....
Sheep	820	.....
Other	469	140
Baking powder	21,067	2
Bells	1,415	67
Billiard tables	1,330	.....
Books	20,908	7,313
Brass, manufactures of	4,280	1,171
Breadstuffs	42,423	5,614
Brick and tiles	4,666	.....
Candles	999	72
Carriages	10,236	727
Clocks	2,200	.....

Table showing the imports into Manitoba and York, etc.—Continued.

Articles.	United States.	Great Britain.
Coal, bituminous	31,866	.....
Coffee	2,952	73
Copper, manufactures of	10,627	909
Cotton, manufactures of	13,829	85,947
Drugs and chemicals	8,985	5,687
Earthenware and china	4,759	7,236
Fancy goods	3,440	13,231
Fish	6,765	1,151
Flax, manufactures of	1,800	26,713
Fruits, dried, and nuts	46,583	674
Fruits, green	94,626	128
Furs and manufactures thereof	1,140	4,431
Glass and manufactures thereof	11,252	3,396
Gloves and mittens	3,320	7,885
Gold and silver and manufactures thereof	2,158	1,305
Gunpowder and explosives	8,318	3,669
Gutta-percha, manufactures of	5,110	8,350
Hats, caps, etc	7,857	7,887
Honey	370	69
Hops	5,228	3
Iron, manufactures of	243,879	14,371
Steel, manufactures of	32,398	28,367
Jewelry	7,117	1,265
Leather and manufactures thereof	21,053	2,047
Musical instruments	7,237	637
Oils:		
Animal	802	.....
Mineral	21,021	8
Vegetable	1,694	2,380
Other	4,105	.....
Paints and colors	1,304	167
Paper and manufactures thereof	22,516	5,520
Provisions	117,961	4,421
Sails for boats	1,312	427
Salt in bags	1,607	.....
Silk and manufactures thereof	1,662	41,453
Slate and manufactures thereof	1,833	12
Soap	2,882	1,266
Spices	578	1,015
Spirits	3,539	9,768
Stone and manufactures thereof	2,356	1
Sugars	10,109	2,512
Tallow	7,458	.....
Tea, black	3,834	.....
Telephones	26,534	.....
Tin and manufactures thereof	1,504	258
Tobacco and manufactures thereof	17,902	1,097
Twine	7,537	521
Vegetables	10,492	71
Watches and materials	4,155	129
Wines	407	3,907
Wood and manufactures thereof	83,587	2,147
Wool and manufactures thereof	1,973	255,547
Miscellaneous	101,954	116,022
Total	1,214,665	655,093

The total dutiable importations of Manitoba and the Hudson Bay district included $83,781 from other countries, the leading articles of which were as follows: From Belgium—window glass, $11,609; from France—breadstuffs, $395; earthenware and china, $689; fancy goods, $604; fruits (dried) and nuts, $1,725; spirits, $10,475; wines, $2,434; from Germany—cotton manufactures, $4,481; drugs and chemicals, $573; gloves and mittens, $963; fancy goods, $2,005; fruits (dried) and nuts, $302; furs and manufactures, $1,203; musical instruments, $922; silk manufactures, $373; woolen manufactures, $5,997; from Japan—drugs and chemicals, $413; earthenware and china, $1,002; fancy goods, $326; silk manufactures, $829; wool manufactures, $718; from Spanish West Indies—tobacco and manufactures thereof, $2,842; from Spain—fruits (dried) and nuts, $4,198; wines, $2,568; from Portugal—wines, $1,996; from Austria—earthenware and china, $343; from Iceland—breadstuffs, $309.

Dutiable goods imported at Port Arthur, Ontario, have been $374,262, consisting of the following articles: Coal (bituminous), $309,049; meats, etc., $9,145; coal oil, $26,231; iron and manufactures thereof, $6,490; dry goods, $1,546; fruit and vegetables, $19,311—all imported from the United States, except $1,583 from Great Britain and $3,937 from other countries.

Dutiable importations at Fort McLeod, Northwest Territories, mostly from the United States, have been as follows: Horses, $35,446; horned cattle, $5,320; sheep, $6,166; breadstuffs, $2,428; carriages, $3,330; coal (bituminous), $375; manufactures of iron and steel, $41,781; provisions, $4,312; spirits, $15,347; tobacco, $637; lumber, $31,020; wool manufactures, $838; sundries, $8,196; total, $155,246.

FREE IMPORTATIONS.

The Manitoba importations of free goods, including entries at Winnipeg and the frontier ports of Emerson and York, were: From the United States, $741,201; from Great Britain, $71,476; from other countries, $29,660; total, $842,337. The leading articles from the United States were: Anthracite coal, $30,554; logs, $412,244; lumber and timber, $8,419; wood for fuel, $22,310; horses, $20,875; eggs, $8,160; furs, $2,891; grease, $1,706; hair, $989; broom corn, $266; green fruits, $8,254; leaf tobacco, $3,616; drugs, $5,208; fish, $677; steel rails, $35,441; articles for the Dominion Government, $1,220; articles for army and navy, $935; settlers' effects, $151,797. The leading articles from Great Britain were: Salt, $712; books, $1,410; drugs, $659; fishing nets, $6,730; mining machinery, $4,895; tin plates, $4,859; articles for the Dominion Government, $1,468; articles for army and navy, $1,404; donations to missions, $3,735; settlers' effects, $16,618; tea, $12,674. Other imports of tea were $11,658 from China, $11,988 from Japan, $2,410 from British East Indies, and $2,544 from India.

Free goods imported at Port Arthur were as follows: Anthracite coal, $91,026; fishing twines, $5,814; fruit, $392; settlers' effects, $1,219; iron

rails, $26,909; hair for plastering, $155; other goods, $9,190; total, $114,505—all from the United States, except $1,092 from Great Britain.

The free goods imported at Fort McLeod, Northwest Territories, were as follows: Settlers' effects, $14,125; steel rails, $137,370; other, $188; total, $157,779—exclusively from the United States.

EXPORTS.

The Manitoba exports, including only shipments from Winnipeg, Emerson, Gretna, and York, were as follows: To the United States, $1,022,251; to Great Britain, $589,704; and to other countries, $169; total, $1,612,124. To the United States the exports consisted mostly of the following: Fish, $97,938; horses, $97,900; buffalo bones, $20,091; furs, $74,749; hides, $5,858; wheat, $544,927 (passing in bond to Canada and Europe); vegetables, $92,866 (all but $370 potatoes, the crop in the Northwestern States being greatly reduced); Seneca root, $20,257. In addition, there were exported to the United States the following articles, more properly described as effects of emigrants, although enumerated by officers of the Canadian customs as follows: Books, $1,469; carriages, $1,447; clothing, $11,493; household effects not enumerated separately, $17,604; iron and steel manufactures (stoves, sewing machines, etc.), $8,533; musical instruments, $3,257; wood manufactures (furniture), $1,699. The exports to Great Britain were: Furs, $540,052; wheat, $29,116; and household effects, $2,450.

The exports from Port Arthur, Ontario, were $304,752—$275,131 to the United States and $29,621 to Great Britain—consisting of: Bullion, $510; silver ore, $234,220; fresh fish, $21,922; furs, $140; and sundries, $18,539.

The exports from Fort McLeod were $4,794, mostly to the United States.

CANADIAN REVENUE.

Upon the foregoing aggregate of $2,482,977 of dutiable goods the duties received amounted to $787,221.29, or an average of 35 per cent ad valorem, including specific duties expressed in ad valorem.

PACIFIC TRADE.

There is no material change in the trade relation between this consular district and the Pacific coast, the exchanges with British Columbia being $200,000 worth of exports, principally flour, butter, and eggs, with return shipments of fish, fruit, and lumber of equal amount.

DOMESTIC OR INTERPROVINCIAL COMMERCE.

The domestic exports to the eastern provinces have been chiefly 15,000,000 bushels of wheat, not exceeding an average of 60 cents per bushel, and amounting, with shipments of other cereals, fish, and furs, to $10,000,000. I continue to estimate (in the absence of official reports of railway transportation) that the domestic imports into this consular district from the eastern provinces and British Columbia will be double the foreign importation, or $7,195,176.

AGGREGATE TRADE.

The following table shows the aggregate trade:

From or to—	Imports.	Exports.	Total.
Canada	$7,195,176	$10,000,000	$17,195,176
United States	2,745,789	1,302,356	4,048,145
Great Britain	729,184	589,704	1,318,888
France	24,310	.....	24,310
Germany	23,627	.....	23,627
Belgium	11,824	30	11,854
Spain	6,702	.....	6,702
Holland	4,419	.....	4,419
Portugal	1,996	.....	1,996
Austria	621	.....	621
Switzerland	912	.....	912
Italy	226	.....	226
Denmark	46	.....	46
British West Indies	952	4	956
Spanish West Indies	5,062	.....	5,062
Spanish possessions	238	.....	238
China	11,708	.....	11,708
Japan	18,534	169	18,703
Iceland	309	.....	309
British East Indies	2,055	.....	2,055
Total	10,783,690	11,892,263	22,675,953

AGRICULTURE.

Passing from the general trade statistics of the fiscal year ended June 30, 1891, it has required more than the remainder of the calendar year to determine the proportions and movements of the crop of 1891. There were confident anticipations by the department of agriculture of Manitoba of 23,191,599 bushels of wheat from 916,664 acres, 14,762,605 bushels of oats from 305,644 acres, and 3,197,876 bushels of barley from 89,828 acres. These estimates were realized from barley and oats; but fields plowed for wheat in the spring were injured by frost, and the exposure of a large portion of the crop in open stooks and badly constructed stacks (many circumstances concurring to interrupt the seasonable harvesting and thrashing of the crop) have reduced the aggregate of wheat available from Manitoba and the Northwest Territories to 15,000,000 bushels; nor has the return to the producer exceeded 60 cents per bushel. Similar results will follow in the future until the Minnesota and Dakota practice is invariably followed of never seeding ground to wheat unless summer fallowed or plowed in the autumn of the previous year.

FISHERIES.

The leading export of Manitoba to the United States is fish from the great lakes and rivers connecting with Hudson Bay, of the value of $97,938, of which $62,938 is represented in the records of consular certificates, the balance of $35,000 having been exported in quantities less than $100 in value and requiring no consular papers for entry at the frontier.

These exports during the year 1891 were distributed as follows:

To—	Value.	To—	Value.
Minneapolis	$13,495.58	Denver, Colo	$5,675.02
St. Paul	30,870.47	New York city	2,213.35
Chicago	9,052.73	Kansas City	1,000.00

This trade may also be represented as follows:

Description.	Quantity.	Value.
	Pounds.	
Whitefish	943,272	$46,017.84
Pickerel (doree)	218,139	7,254.92
Pike (jackfish)	189,685	4,305.01
Sturgeon	128,812	3,660.36
Tulibees	34,643	929.87
Perch	1,394	29.34
Herring	4,246	84.92
Suckers (carp)	200	24.00
Catfish	39	.89
Total	1,520,430	62,307.15

The shipment of fish to the United States from Port Arthur agency for the same period was $21,621, making an export from this consular district of $119,860, or an aggregate of 3,000,000 pounds, which is increasing annually, as the duty of 75 cents per 100 pounds is no material obstacle to the exportation.

RAILWAY CONSTRUCTION.

Although the population of Canada advances slowly (the census of 1891 showing a population of 4,823,344, or an increase of only 11½ per cent, instead of 19 per cent ascertained in the previous decade), yet capital is not deterred from the prosecution in a remarkable degree of railway interests. At the beginning of 1892 western Canada had in operation 4,000 miles of railway to 400,000 people, and the current season will witness an extension of the Canadian Pacific system fully 200 miles westward to the Scuris coal fields of Manitoba and south of Calgary in the direction of Montana and a more favorable pass through the Rocky Mountains to the valley of the Columbia River. It is well understood that the Sault Ste. Marie Railway, south of Lake Superior, during 1892–'93 will be extended through Minnesota and Dakota to a connection with Regina, on the Canadian Pacific, the capital of the Northwest Territories of Canada; that the lines of the Great Northern and Northern Pacific will closely follow, if they do not traverse, the international frontier simultaneously; and that the projectors of a line west and south of Hudson Bay, aided by a federal land grant valued at $10,400,000 and a bonus of $1,500,000 from the Manitoba government, are sanguine of success in their efforts to enlist English capital.

JAMES W. TAYLOR,

UNITED STATES CONSULATE, *Consul.*

Winnipeg, June 30, 1892.

AMERICAN INTERESTS IN MADAGASCAR.

REPORT BY CONSUL WALLER, OF TAMATAVE.

In transmitting this, my first annual report, I am forced to reiterate and emphasize the following paragraph found in the report of ex-United States Consul W. W. Robinson. On page 936 of Commercial Relations of 1878 Consul Robinson says:

> Although present demands will not warrant the establishment here of a house restricted to any one line of trade, I think there is a good opening at this port for one American wholesale and retail house in general merchandise other than brown cottons and oil, the market being fully supplied with those articles by parties well established. Such a house should also do a commission business in any and all kinds of specialties and American novelties, and, if conducted by an American upon American rules of trade, would soon take the trade which now goes to Europeans and the representatives of the various eastern races.

I doubt not that an American wholesale and retail house could in a very short time build up a splendid business in Madagascar. Such a house could soon become a wholesaler to the city of Tananarivoo, containing 100,000 inhabitants, and to the smaller towns, as well as to the grocers of Tamatave, of which there are ten of considerable importance and about double that number of smaller caliber. All these grocers are doing a very good business, and those wholesaling on a small scale are making money; but these houses would be unable to compete with American wholesalers, either in the class of goods to be sold or in business tact.

It should carry a miscellaneous assortment of merchandise for the Madagascar market, among which should be included the following articles: Flour in barrels, corn meal, oatmeal in packages of 1 to 4 pounds, cured hams and bacon, salt pork; pickled, corned, and dried beef; pigs' feet, and such canned goods as cove oysters, lobsters, salmon, and sardines; canned fruits, such as peaches, pears, apples, and apricots; vegetables, as tomatoes, asparagus, peas, and corn. Milk and soda crackers and sweet biscuits will also sell well in this market; also, condensed milk and creamery and manufactured butter in cans of 1 to 5 pounds.

An assortment of hardware, such as spades, hatchets, large and small axes, handles, nails, bolts, screws, door locks and fastenings, hand and cross-cut saws, and carpenters' tools, would also find sale in this market.

Light and heavy prints, muslins, satines of all grades, lawns, challis, and all kinds of middle-grade goods, including flannel for underwear in damp weather—such being used by all foreigners—might also be tried.

AMERICAN IMPORTS.

I wish to call the attention of the American merchants, through the Department, to the subjoined table, showing the quantity and value of goods, including petroleum, imported from the United States within the period mentioned therein, and from which it can be seen at a glance that, if pushed,

the trade in these goods might be materially increased in this market, as I doubt not the demand for such merchandise will increase.

Table showing the direct imports of American products into Madagascar during the year ended August 12, 1892.

Articles.	Quantity.	Wholesale value.	Amount of duties.
Petroleum oil.....gallons...	32,000	$3,520	$252
Cottons.....bales...	7,500	581,250	58,125
Total.....	.....	584,770	58,377

Madagascar contains 250,000 square miles and a native and foreign population of about 6,000,000, two-thirds of whom wear cotton clothing; besides, three-fourths of the foreigners are consumers of coal oil, or petroleum. Therefore, I can not see why the trade in these goods should not attain such a footing as would warrant a steady increase from year to year.

I am cognizant of the fact that American manufacturers of cotton goods have a very troublesome and unjust obstacle to contend with in this market. Knowing that the natives, who are our largest buyers, prefer American cottons, imitations of American brands of these goods are imported into this market from England and other countries and sold as American cottons to the natives. One house, which has been recently started here, is constantly doing this sort of business. The manager disposes of his goods rapidly and to very great advantage. This gentleman says that English manufacturers allow him far better terms than he can obtain from American manufacturers and merchants. If there is any means by which this ruinous practice can be suspended, it will be greatly to the interest of American commerce to put such means in force, and thus protect an increasing trade, furnishing an outlet for American products for years yet to come, and especially while the people of the two countries entertain such cordial relations toward each other.

There seems to be no reason why the amount of imports in various American goods should not be written in seven to eight figures, and thus necessarily create a larger field for American labor in the producing, marketing, gathering, and manufacturing of these goods; in short, if the American imports could be raised from $584,770 to $1,000,000 annually, it would not take a mathematician to demonstrate the benefit to American labor by which these goods must be produced and placed upon the market in Madagascar.

Before dismissing this subject, I may remark that considerable quantities of American cottons are imported into Madagascar in French and English vessels, and are consequently credited to the country to which the ship belongs; therefore, no report of the amount and value of these goods can be made.

EXPORTS TO THE UNITED STATES.

Table showing the exports from Madagascar to the United States for the year ended August 12, 1892.

Articles.	Quantity.	Value.	Charges.
India rubber.....pounds...	45,490	$42,229.43	$1,728.76
Dry-salted hides.....number...	163,838	215,859.27	10,133.32
Total.....	.....	258,088.70	11,862.08

MEANS OF TRANSPORTATION.

There are three regular lines of steamships visiting the port of Tamatave, viz: The Messageries, running between Marseilles, Tamatave, Bourbon, and Mauritius, landing mail and passengers at Tamatave on the 7th and 26th of each month; the Donald Currie, running between London, Tamatave, and Mauritius, doing both a freight and passenger business; and the Union Steamship Company, running between Southampton, Tamatave, and Mauritius. The route of both the last-named companies is via the South Atlantic, touching at Cape Town and all South African ports. The route of the Messageries is through the Suez Canal, calling at Aden and all ports along that route.

All these steamers are provided with the most comfortable arrangements, and, although not quite so large, compare favorably with the great North Atlantic steamers. Besides these, sailing ships from America, England, France, Germany, and India make regular visits to this port.

COPPER, IRON, AND LEAD.

Copper is found in great abundance in Madagascar; but, on account of the fact that there are no railroads or other means of transporting this heavy article of commerce from the interior to the seaboard, no attention is paid to it.

What I have said relative to copper also applies to iron and lead, which, I am informed by miners from Australia, America, South Africa, and other countries, can be found in great quantities in almost all parts of the island. But as yet these valuable products have not been disturbed or brought into requisition for the benefit of mankind, for whom they were created.

GOLD.

It is generally conceded by competent persons that gold exists in paying quantities in Madagascar, and, were it not for the fact that the Malagasy Government persists in charging such an unreasonable percentage, viz, 56 per cent on all the gold or silver found, and that the prospectors have to furnish all the machinery, gold-mining, I doubt not, would become a profitable experiment in a very short time.

A large amount of alluvial gold is gathered by the natives and sold in large and small quantities to men of means, who make it a business to traffic in this precious metal. Bankers and other persons export annually to England and France thousands of pounds of gold.

I requested the customs officers at Tamatave to furnish me with a statement showing the exportation of gold, but they did not seem inclined to do so. I am sure that if a true statement could be obtained some very interesting, as well as astonishing, figures could be shown.

I deem it highly important to lay before the American business men the following statement found in the official report of the British acting consul, Mr. Clayton Pikersgill, for 1890–'91. Mr. Pikersgill says:

During the past year about 18,200 ounces of gold have passed through the capital for exportation by way of the east coast. Adding 10,000 ounces as a moderate estimate of the quantity which has left the island via the west coast and calculating that 10,000 ounces are hoarded in the city and its vicinity, we arrive at a rough total of £110,000 worth of gold as a result of twelve months' scratching at the surface of the country's mineral deposits—a by no means unpromising output, considering that ten years in chains was named as a punishment for persons found in possession of gold dust and that mining is prohibited under a penalty of twenty years in chains.

This unsatisfactory state of things is on the eve of removal, and long before the close of the year a general mining development, by natives at least, is expected.

Commenting upon the above report in its issue of August 13, 1892, the Madagascar News says:

As it is, Mr. Pikersgill's estimate of the illicit gold output is known to be far within the mark. Some authorities place the actual output at a very much higher figure than 38,200 ounces annually.

However, even the standard is quite sufficient to show that, with gold-mining permitted without restriction, the gold output will, apart from all other produce, more than establish a balance of trade.

We will state the case in the form of a tabulation:

Year.	Imports from Great Britain.	Exports to Great Britain.	Excess in favor of bills on Madagascar.
1889	£82,961	£83,618	£657
1890	84,733	98,833	14,100

The report of Mr. Pikersgill, as a matter of fact, covers only English exportations, and is therefore a very partial statement, since fully as large shipments are sent to France, Germany, and Italy, of which no statistics are at hand.

But, until a more liberal fee for mining shall be allowed by the native government and the political status settled, I think it would be unwise for Americans to invest any capital in mining enterprises in Madagascar.

BANKING.

I beg to direct the attention of American bankers to the fact that there is now a splendid opportunity to establish a bank in Madagascar without delay.

Since the failure of the New Oriental Banking Company (limited), of London, England, which had a branch in Madagascar, there is a great demand for the establishment of a good nonpartisan bank in Madagascar.

Investigation will show that the Madagascar branch of the New Oriental was making money, and that it was in a very prosperous condition at the time of the suspension of its source in London. In support of this statement I respectfully suggest a careful perusal of my report on gold herein, which shows an increase on bills in favor of Madagascar to the amount of £13,443, or $67,215, in 1890 over 1889.

I must add that, after mature consideration, I have arrived at the conclusion that the establishment of an American bank, the principal branch of which should be at Tananarivoo and the other at Tamatave, would immensely contribute to cement the good relations now existing between the two nations. Such a bank would be encouraged by the Government of Madagascar.

GENERAL EXPORTS.

The following is a partial statement showing the general export of Madagascar products through the custom-house of Tamatave during the year ended August 12, 1892:

Articles.	Quantity.	Value.
Sugar.....pounds...	394,213	$1,971,065
Vanilla.....do.....	2,131	8,524
Cattle.....number...	1,015	10,150
Total.....	.....	1,989,739

It must be borne in mind that I am only able to show partial exports and imports from and to the port of Tamatave, and that I am unable to obtain the data showing the quantity and value of rubber, hides, rofia, and vanilla exported by the several large shippers at Tamatave; but it is safe to say that the amount of exports and imports far exceeds those made by Americans. There are also large shipments to and from Mananzary, Vatomandry, Diego Suariez, and other Madagascar ports.

JOHN L. WALLER,
Consul.

UNITED STATES CONSULATE,
Tamatave, September 10, 1892.

FIBERS OF NICARAGUA.

REPORT BY CONSUL NEWELL, OF MANAGUA.

Some time since there was received at this consulate a letter from a firm in Chicago, making inquiry about the fibrous plants that are indigenous to the soil of Nicaragua and if a business could be carried on here profitably in extracting fibers. It is in answer to that letter that I have collected and embodied the facts contained in this report.

This question, I am confident, will interest many, as it is well known that one of the most valuable agricultural products is fiber, which enters into the manufacture of rope, cord, sacks, osnaburg, and the various classes of cloths that are used in packing goods for transportation.

The vegetables that produce fibers are numerous, but the one most cultivated in all hot climates is that belonging to the family of agaves. The principal fiber of this family is hennequen, found abundantly in Mexico, and which has been a source of great riches to Yucatan and other departments of that Republic. In Nicaragua it grows perhaps more vigorously and exuberantly than in any other country; especially is it abundant in the departments of Leon and Chinendega. With a view to foment the cultivation of fiber the Hon. Roberto Sacasa, President of Nicaragua, then a representative in Congress, proposed a law in 1883, which was unanimously adopted by Congress, and reference to which is made in this report later on. Notwithstanding that law, the subject did not receive the attention that it merited; but this abundant fountain of riches remained inactive until lately, when a Nicaraguan gentleman, Señor Dr. Don Fernando Sanchez, who, comprehending all the advantages consequent upon the culture of fibrous plants, celebrated a contract with this Government for the cultivation of hennequen and for the exclusive privilege of manufacturing sacks and cordage with this fiber for a period of twenty-five years.

By the terms of this contract Mr. Sanchez binds himself to form and cultivate a plantation of penca that will contain not less than 500,000 plants and to establish and have in service during the period hereafter mentioned machinery that may be necessary to extract this fiber with a capacity sufficient for the production of 500 tons of fiber annually. He also agrees to put in operation the machinery required to fabricate not less than 150 tons annually of rope and a like amount of sacks. The plantation must be completely established within the term of two years, counting from the date of the ratification of this concession, and the necessary machinery must be in operation one year afterwards. This contract was ratified by Congress on December 1, 1891. The Government concedes to Mr. Sanchez for the space of twenty-five years the exclusive right to manufacture rope and sacks of fiber by means of machinery moved either by steam or hydraulic force. Furthermore, it binds itself not to rebate the duties now actually existing for the introduction of cables and articles of cordage. The Government.

agrees to pay the freight on the machinery that Mr. Sanchez may introduce within the term of three years and to transport the same free on the National Railroad, save if he shall have sold or leased the same at the date of introduction. During the continuance of this concession the enterprise of Mr. Sanchez will be exempt from all fiscal imposts. The employés will be relieved from military service in time of peace and at all times from public duties. The number of employés will be fixed in accordance with the ideas of the Government. Should Mr. Sanchez deem it expedient to introduce fibrous plants of a better quality than penca, the Government will contribute 5 per cent of the cost of introduction and will pay the freight; it will also transport the same gratis upon the National Railroad. Power is granted Mr. Sanchez to organize a company for the execution of this contract.

The privileges conceded in this concession become inoperative if the plantation is not formed or the machinery is not in full working order within a period of three years from the date of the ratification of this contract. It also becomes null and void if the works are suspended during ten consecutive months, except for fortuitous circumstances.

As an evidence of good faith Mr. Sanchez is required to give either a bond or to deposit $2,000 in the Government treasury. So far as I have been able to ascertain, no steps have been taken to carry out the provisions of this concession.

The law of March 13, 1883, conceded a premium of 3 pesos for each quintal of pita or bromelia and 1 peso for each quintal of cabulla (*Agave americana*) that was exported in fiber or manufactured. This law was to remain in operation for eight years from the date of the issuance of the decree. By a decree dated March 16, 1889, the provisions of the law of March 13, 1883, were extended.

It would be a lengthy task to enumerate all the fibrous plants that grow in Nicaragua, for, besides the very many that belong to the amaryllidaceous family, almost all palm trees produce fibers.

The principal fibers that are produced and utilized in Nicaragua are the pita, bromelia pita, and the cabulla (*Agave americana*). Of these the most cultivated is the cabulla. Panama hats are manufactured from pita. Though cabulla and pita are abundant, they are not so much so as to warrant the introduction and operation of machinery for the extraction of fibers.

The plants that produce pita and cabulla grow generally in rich soil and thrive best where there is an abundance of rain. The localities where the most and the best cabulla is produced are in the departments along the Atlantic coast. These fibers are found in places very difficult of access.

Fibrous plants have not as yet been cultivated to any great extent in this country, for the natives have never thought of exporting pita or cabulla. They are satisfied to sell in this Republic the few hundred pounds that they extract. I believe that if mills were established here there would be no difficulty in obtaining a sufficient number of laborers to collect the fiber and

to assist in its transportation. As will be noticed in the previous lines of this report, the extraction of pita fiber in Nicaragua has become a monopoly.

The methods that have hitherto been employed in the extraction of fibers are very primitive, as well as very simple. The leaves are first soaked for several days, after which they are beaten. A species of bamboo is next split in two, through which the leaves are drawn, and this is the way that the fiber is extracted. I am informed, however, that Señor Don Ricardo Contreras, of Leon, has an apparatus for beneficiating cabulla. The apparatus referred to is, I think, the only mechanical appliance used here to obtain fibers.

On account of the limited production, there is no exportation of fiber. All that is produced here is used in the manufacture of hammocks, hats, and rope, the articles being sold in this country. It would not pay to export fiber from this Republic, unless both varieties named of *Agave americana* belonging to the natural order amaryllidacæ were cultivated, and not far from a seaport.

WILLIAM NEWELL,
Consul.

UNITED STATES CONSULATE,
Managua, August 15, 1892.

TRADE IN THE KONGO FREE STATE.

REPORT BY COMMERCIAL AGENT MOHUN, OF BOMA.

I have the honor to inclose herewith tables showing exports from the Kongo Free State from July 1, 1886, to June 30, 1891.

I do not believe these figures can be absolutely relied upon, as the State Government being in its infancy the attention to detail has not been paid which would have been done under an older government; still, I think they are approximately correct and will serve to show without a doubt that the country is on the fair way to prosperity.

In connection with this subject I would state that the Société Anonyme Belge pour le Commerce du Haut Congo has engaged the services of Mr. Warren C. Unckles, an American gentleman from New York, long resident in Costa Rica (and who has had a large experience in coffee and rubber), to develop the rubber trade in this State and find good locations for coffee plantations. Mr. Unckles, who arrived here from Europe on the German mail steamer *Lulu Bohlen* July 2, brought ten experienced Costa Rican and Nicaraguan rubber-cutters with him, and it will be the object of these men to induce the natives to cut the rubber properly and bring the milk to them in their different camps, where they will prepare it in the proper method for shipment. I think this is a most important step, as the rubber now being exported from here is of a very inferior quality, much mixed with dirt, bark from the trees, and oil from the bodies of the natives, where it is plastered on for convenience in carrying.

In regard to coffee, I would say that no coffee is now cultivated in the Kongo, but what is shipped is the wild berry found by the natives in the bush and brought down to the traders. This coffee is of rather poor quality, small bean, and bitter taste. With proper cultivation it will improve.

The one shipment of copper was made by the Dutch house in 1887. It comes from near Manyanga, about seven days' march (say 120 miles) east by north of Boma. Few whites have as yet been to the mines, and the natives do not care to have them come into their country. It is brought down in ingots and is of a very fine quality; but the natives do not care to trade it, as they make most of their implements of warfare and household use from it.

Palm kernels are from the palm tree, found in the lower Kongo Valley, and what is shipped from here does not come from more than seven days' march (say 120 miles) from Boma in any direction. The traders ship the kernel in bags. The oil is boiled by the natives from the husk of the kernel and sold to the traders in balls of hard oil; it is then liquefied in the factories and shipped in barrels to Europe, where it is refined.

The ivory shows a most remarkable increase and is the most valuable article exported. It all comes from the High Kongo, both north and south of the river. Steamers bring it as far as Stanley Pool, and from there to Matadi (250 miles) native carriers bring it on their backs. I have seen in one day 500 carriers come into Matadi, each man carrying a tusk averaging 65 pounds in weight. When tusks weigh 200 pounds, which not infrequently happens, four men carry them. Most of the ivory now coming down is what is known as "dead ivory." Some of the elephants from which these tusks came were killed one hundred years ago, and the kings of villages have been storing it, placing the last tusks brought in on top of the pile, and when they required some goods from the coast traders the tusks from the bottom layers were taken. This system has prevailed for years, and it is estimated that there is enough ivory stored in the interior to supply the world for the next century. It is estimated, but upon whose authority I can not discover, that there are still at least two hundred thousand elephants in central Africa. The only "live," or new, ivory which now comes down is that procured by hunters attached to the different trading houses. I may add that live ivory commands a higher price than the dead. A State expedition visited a native king some months ago in the interior. Upon leaving the commanding officer presented the king with a uniform coat, cocked hat, and a sword. The king, in return, presented the officer with one hundred and fifty tusks of ivory averaging 220 pounds each and provided carriers to take them to the river. These people do not recognize the value, and laugh at the trader for buying. Some of these kings have stockades of ivory built around their dwellings.

Peanuts are shipped for the purpose of extracting the oil they contain. Most of them go to the south of France, where the oil is made into toilet soap.

Table showing exports from the Kongo Free State by years from July, 1886, to June, 1891.

Articles.	July to December, 1886.		January to December, 1887.		January to December, 1888.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Kilograms.	*Francs.*	*Kilograms.*	*Francs.*	*Kilograms.*	*Francs.*
Peanuts	4,193	1,206.88	9,634	2,878.84	9,761	2,928.30
Coffee	327	376.05	.....	.....	.....	.....
Rubber	18,069	79,503.60	30,050	116,768.80	74,894	260,029.00
Copal	1,409	2,818.00	2,327	4,182.25	4,055	7,096.25
Palm oil	461,664	207,748.80	1,028,022	462,609.90	1,033,612	465,125.40
Ivory	18,666	373,320.00	39,785	795,700.00	54,802	1,096,240.00
Palm kernels	1,078,204	217,640.40	2,954,906	590,781.20	3,773,957	754,891.40
Sesame	822	305.50	6,204	1,596.20	6,350	1,587.50
Cudbear	3,284	3,612.40	5,385	5,923.50	2,012	2,213.20
Rocon	.....	.....	.....	.....	443	487.30
Copper	.....	.....	.....	.....	9,401	18,802.00
Total	.....	886,431.63	.....	1,980,441.45	.....	2,609,400.35

Articles.	January to September, 1889		January to December, 1890.		January to June, 1891.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Kilograms.	*Francs.*	*Kilograms.*	*Francs.*	*Kilograms.*	*Francs.*
Peanuts	32,778	9,836.40	9,918	2,975.40	150	45.00
Coffee	.....	.....	46,437	88,230.30	9,495	18,420.30
Rubber	104,940	367,310.00	124,066	556,497.00	81,680	326,720.00
Copal	4,916	8,603.00	1,716	3,003.00	957	1,674.75
Palm oil	854,976	384,289.30	2,303,926	1,151,963.00	1,573,192	849,523.68
Ivory	87,401	1,748,020.00	180,605	4,668,887.00	141,775	2,835,500.00
Palm kernels	2,632,966	526,593.20	6,529,879	1,763,067.33	4,714,763	1,320,133.64
Sesame	23,097	5,774.25	23,292	5,823.00	156	39.00
Cudbear	510	551.00	914	1,005.20	840	924.00
Rocon	290	319.00	236	259.60	490	539.00
Hides	.....	.....	444	488.40	.....	.....
Total	.....	3,051,296.15	.....	8,242,199.23	.....	5,353,519.37

Articles.	Total.			
	Quantity.	Value.	Quantity.	Value.
	Kilograms.	*Francs.*	*Pounds.*	
Peanuts	66,444	19,870.82	146,176	$3,835.07
Coffee	56,259	107,026.65	123,770	20,656.14
Rubber	433,099	1,706,828.40	952,817	329,417.88
Copal	15,380	27,377.25	33,836	5,283.81
Palm oil	7,254,392	3,521,260.08	15,959,662	679,603.20
Ivory	523,034	11,517,667.00	1,150,675	2,222,909.73
Palm kernels	21,684,035	5,173,107.17	47,704,877	998,409.68
Sesame	59,921	15,026.21	131,826	2,900.06
Cudbear	12,945	14,229.30	28,479	2,746.26
Rocon	1,459	1,604.90	3,210	309.75
Copper	9,401	18,802.00	20,682	3,628.79
Hides	444	488.40	977	94.25
Total	.....	22,123,288.18	.....	4,269,794.62

Table showing exports from the Kongo Free State by years, etc.—Continued.

RECAPITULATION.

Year.	Value.	
	Francs.	
1886	886,431.63	$171,081.30
1887	1,980,441.45	382,225.20
1888	2,609,400.35	503,614.27
1889	3,051,296.15	588,900.16
1890	8,242,199.23	1,590,744.45
1891	5,353,519.37	1,033,229.24
Total	22,123,288.18	4,269,794.62

As all these articles are traded for, it is probable that the values are really 100 per cent below their actual selling prices in the European markets.

R. DORSEY MOHUN,
Commercial Agent.

UNITED STATES COMMERCIAL AGENCY,
Boma, July 9, 1892.

HOW TO INCREASE AMERICAN TRADE.

REPORT BY CONSUL SMITH, OF THREE RIVERS.

Some time ago, while looking over an American trade journal, it occurred to me that there were many articles of great utility manufactured in the United States and not handicapped by the Dominion tariff, and many more that, though taxed, Canadian enterprise had not attempted to produce, which an active and intelligent man might introduce here to his own and the manufacturers' great advantage; that although he might not find in the sale of any one of them an adequate return for his labor, he could, by grouping a number together, build up a large and lucrative business. Acting upon the thought, I selected a young man well known in the community and familiar with its wants, and suggested that he convert his head into a variety shop for the sale of American goods. He was eager to make the attempt and at once placed himself in correspondence with the manufacturers of such articles as he thought he could sell. The result has more than justified the experiment; he has secured a number of agencies, has an office filled with samples, and is making many large and remunerative sales. As it is an enterprise which involves no risk to the manufacturer and one which may be indefinitely extended, I have thought it best to report both the idea and its success to the Department.

NICHOLAS SMITH,
Consul.

UNITED STATES CONSULATE,
Three Rivers, August 16, 1892.

WAGES IN LIVERPOOL.

REPORT BY CONSUL SHERMAN.

SHIPBUILDING TRADE.

The following are the rates of pay fixed by the unions of the respective branches of this trade, and which are generally paid: Platers and angle-iron smiths, $1.90 per day; platers' helpers, $1.09 per day; riveters (when engaged by the day), $1.64 per day; blacksmiths, $1.58 per day; strikers, 97 cents per day; ship carpenters (shipwrights), $1.70 per day; ship joiners, $1.58 per day; ship-painters, $1.37 per day; boat (small) builders, $1.70 per day; block-makers, $1.46 per day; laborers, $4.38 to $5.10 per week; engineers (fitters and turners), $8.26 per week.

The hours of labor in each branch are fifty-four per week.

DOCK LABORERS.

The rates of pay given below are fixed by the National Amalgamated Society of Dock Laborers. The society is a strong one, and the rules laid down with respect to wages, hours, etc., are rigorously adhered to.

The hours are from 7 a. m. to 5 p. m.; Saturday, 7 a. m. to 4 p. m.

The wages paid per day are as follows: Stevedores, $1.70; laborers (breaking cargo in ship's hold), $1.46; man over hatch, $1.33; man over rail, $1.33; riggers, $1.33; ordinary work, $1.21; quay laborers, $1.09; landing clerks, $1.46; weight-takers, $1.33; receivers, $1.33; measurers, $1.33; checkers, $1.33.

SEAMEN.

The wages on steamers to the Mediterranean are as follows: Sailors, $19.46 per month; firemen, $19.46 and $20.67 per month.

To the westward the wages on large steamers are: Sailors, $21.89 per month; firemen, $24.33 per month.

To the southward the wages on steamers are as follows: Sailors, $18.24 per month; firemen, $20.67 per month.

On sailing vessels sailors are paid $14.59 per month.

The following wages are paid on steamers to the Baltic: Sailors, $20.67 per month; firemen, $21.89 per month. Stewards generally are paid $14.59 per month.

VARIOUS TRADES.

Plumbers receive 17 cents per hour. Apprentices to the trade receive 73 cents per week for the first year, 97 cents for the second, $1.21 for the third, $1.46 for the fourth, $1.94 for the fifth, $2.43 for the sixth, and $2.92 for the seventh. In summer time the hours are fifty-five per week, and in the winter forty-seven and one-half.

Painters are paid 15 cents an hour. Apprentices are paid 97 cents per week for the first year, increasing yearly until the seventh year, when they

receive $3.40. The hours are fifty-five per week in summer and forty-seven and one-half in winter. Grainers and writers are paid 2 cents per hour over the above rates.

Joiners are paid 16 cents per hour and are required to work fifty-five hours per week. During four months in winter where there is no artificial light supplied they are paid 17 cents per hour for fifty hours. Apprentices to this trade are paid the same as plumbers' apprentices.

Foremen in the plumbing, painting, and joinery trades are paid from $9.73 to $12.16 per week, according to arrangement.

Slaters and plasterers receive 17 cents per hour. Apprentices' wages range the same as plumbers' apprentices.

Bricklayers are paid 18 cents per hour and are required to work fifty-five hours per week.

First-class bakers are paid from $7.78 to $8.75 per week; second class, $5.83 to $6.80; and the third class, $4.38 to $5.34. Foremen's wages vary from $9.75 to $14.59 per week.

Stone masons' wages and hours are the same as bricklayers'. Carvers in building stone earn $4.25 per day of nine hours.

As to warehousemen, the following figures cover all the branches of this class of labor: Warehousemen, $8.51 to $9.73 per week; warehouse porters, $1.09 per day; cotton porters, $1.09 per day; laborers, $1.09 per day; weighers, $1.21 per day; markers, $1.21 per day. The hours are from 8 a. m. to 6 p. m.

Laborers in chemical works are paid 66 cents per day and 79 cents per night to commence with, and afterwards do not exceed 85 cents per day and 91 cents for night work. Boys under 18 years of age are paid 36 cents per day.

Laborers (men and boys) handling palm oil are paid from $2.92 to $5.83 per week.

Drivers of all kinds of one-horse conveyances receive $5.10 to $6.32 per week.

Barbers' wages vary from $6.80 to $8.51 per week. A few first-class shops pay up to $10.94, but the large majority are paid at the former rate. The hours are from 8 a. m. to 9 p. m.; Saturdays, 8 a. m. to 11 p. m.

EMPLOYÉS IN THE MANUFACTURE OF STEEL WIRE.

One lot of laborers are paid from $7.29 to $8.51 per week, according to ability and the class of work upon which they are engaged.

Common laborers are paid $4.86 per week.

Mechanics' wages are $11.55 per week of fifty-five hours.

The wages of joiners are $8.51 per week of fifty-five hours.

Blacksmiths are also paid at the rate of $8.51 per week, but very seldom earn more than $6.07 per week.

Bricklayers in these works receive $10.21 per week, but this amount is generally increased to $14.59 with overtime. When required to work on Sun-

days it is counted two days, and men employed at night work five days to the week.

LEEDS AND LIVERPOOL CANAL.

The wages of employés on the Leeds and Liverpool Canal are as follows:

Description.	Number of men.	Average wages.
		Per year.
Staff engineer's department	1	$1,216.64
Do	1	583.97
Do	1	291.99
Clerks:		
Receiving £100 per annum and upwards	8	672.11
Receiving under £100 per annum	34	253.28
Principal agents	8	525.57
Subagents	12	361.17
Lock-keepers	44	247.22
Engine superintendent	1	778.63
Horse superintendent	1	656.97
Canal inspectors	2	729.97
Pensioners	7	78.63
Office keeper	1	379.58
		Per week.
Bank rangers	143	4.90
Dredgers	44	4.94
Masons	19	6.40
Carpenters	83	6.15
Smiths	7	6.07
Wigan fitting shop	9	7.69
Storekeepers	2	10.15
Cover-makers	3	6.64
Provender stores	2	5.59
Marines	4	5.28
Porters	52	5.44
Stablemen	7	4.78
Tunnel tugs	4	6.38
Steamers	81	7.71
Flyboats	97	7.25
Slew boats	134	5.48
Lime rock, Skipton	13	5.12

GROCERY AND PROVISION TRADES.

The following is a fair and liberal estimate for employés in this trade: Managers, $7.29 per week; assistants, $5.34 to $5.83 per week; juniors, $2.92 to $3.40 per week. The hours are from seventy-six to eighty-five per week.

TANNING TRADE.

The wages of men employed in the tanning trade are as follows: Fellmongers, 12 and 16 cents per hour; curriers, 12 cents per hour; jobbers, 81 cents per day; breaking, 10 cents per hour; splitting, 81 cents per day; wool-drying, 81 cents per day; machine men, 89 cents per day; salting, $1.50 per day; wool room, 73 cents per day; tan shed, 48 to 68 cents per day; engine, $1.21 per day; carter, 97 cents per day; joiner, $1.46 per day; piecing, 10 cents per hour.

CLAY TRADE.

The wages in the clay trade are as follows: Miners, 60 cents per day of eight hours; washers, 60 cents per day of eight hours; dry men, 14 cents per ton; packers, 15 cents per ton.

MANUFACTURE OF ARTIFICIAL TEETH.

The employés of this manufacture are engaged as boys at $1.21 per week and their wages raised annually until competent, when they are paid from $6.32 to $7.29 per week according to ability.

ST. HELEN'S CONSULAR DISTRICT.

The wages paid to laborers, etc., in the St. Helen's consular district are as follows:

Description.	Wages.	Description.	Wages.
Colliers.		*Brick and pipe works.*—Continued.	
Miners.....per day...	$1.46 to $1.94	Girls carrying off.....per week...	$1.70
Firemen .....do.....	1.46 to 1.58	Setting bricks in kilns.....do.....	7.29
Limberers.....do.....	1.13 to 1.27	Setting pipes in kilns.....do.....	6.07
Packers.....do.....	.99 to 1.23	Blowers in clay hole.....do.....	5.83
Contractors.....do.....	1.33	Laborers.....do.....	4.86
Brow men.....do.....	.85	In yard.....do.....	4.38
Flint-glass works.		*Iron foundry and engine works.*	
Glassmakers.....per week...	7.29 to 14.59	Fitters.....per week...	8.26
Glass-cutters.....do.....	7.29 to 7.53	Turners.....do.....	8.26
Joiners.....do.....	7.29	Slotters.....do.....	$6.56 to 7.29
Blacksmiths.....do.....	8.26	Drillers.....do.....	5.34
Coopers.....do.....	5.83	Smiths.....do.....	8.26
Brick-setters.....do.....	7.53	Smiths' strikers.....do.....	4.86
Brick and pipe works.		Molders:	
Firemen at boilers.....per week...	5.83	Sand .....do.....	6.80
Pipe and brick burners.....do.....	7.29	Loam.....do.....	9.73
Assistants.....do.....	4.86	Pattern-makers.....do.....	7.53
Men at brick machine.....do.....	5.34	Platers .....do.....	7.77
Wheelers.....do.....	2.43	Holders-up .....do.....	7.29
Men at pipe machine.....do.....	5.83	Helpers.....do.....	4.86
Finishers (women).....do.....	2.92	Laborers.....do.....	4.62

THOS. H. SHERMAN,

UNITED STATES CONSULATE, *Consul.*

Liverpool, August 12, 1892.

WAGES IN THE COTTON INDUSTRIES OF THE WORLD.

REPORT BY CONSUL LINCOLN, OF ANTWERP.

I have the honor to transmit herewith a translation of a tabular statement submitted by Mr. Louis Strauss to the international congress recently held in this city, showing the wages paid in the cotton industries of different countries as affected by the various tariff systems.

GEORGE F. LINCOLN,

UNITED STATES CONSULATE, *Consul.*

Antwerp, September 2, 1892

MR. STRAUSS'S TABLE.

[Inclosure in Consul Lincoln's report.]

INTERNATIONAL CONGRESS OF ANTWERP ON THE SUBJECT OF TARIFF LEGISLATION AND REGULATION OF LABOR LAWS. SECTION NO. 2, TENTH QUESTION: WHAT INFLUENCE DOES PROTECTIVE TARIFF EXERT UPON WAGES?

WAGES IN THE COTTON INDUSTRY.

Notes gathered in 1892 by Monsieur L. Strauss, honorary consul, president of the Society of Old Students of Institute of Commerce, of Antwerp; vice-president of superior council of industry and commerce of the section of commercial geography of the chamber of commerce of Antwerp.

Table showing the weekly wages paid in the cotton industry in the several countries.

Classification.	Belgium (69 hours).	Holland (63½ hours).	England (56½ hours).	Switzerland (65 hours).
First foreman for preparing cotton	$4.40	$9.00	$9.50	$7.80
Second foreman for preparing cotton	4.00	5.00	.....	4.80
First foreman for spinning mill	4.40	8.00	9.70	8.40
Second foreman for spinning mill	4.00	5.00	.....	4.80
Foreman for weaving	$4.00 to 4.40	$4.00 to 5.00	8.60	8.40
Carpenter	4.80	4.00	.....	4.80
Mason	4.50	4.00	.....	4.80
Blacksmith	4.20	4.00	8.10	5.00
First stoker	4.40	5.00	5.30	6.60
Second stoker	4.00	3.60	.....	5.40
Engineer	4.80 to 5.60	5.00 to 7.00	$10.80 to 11.60	6.60
First oiler	4.40	5.00	5.30	.....
Second oiler	3.60 to 4.00	3.60	.....	.....
Workmen tending beating machines	2.50 to 3.04	4.00	.....	2.88
Card-sharpeners	2.50 to 3.04	4.40	5.10	2.64
Carders:				
Men	2.60	4.00	6.20 to 7.20	2.40
Women	2.40	2.40	2.60	2.04
Workers of spindle frames (women)	2.60	2.40 to 3.00	3.00 to 4.00	2.64
Bobbin-winders:				
Men	2.00	.....	.....	2.40
Women	1.80	1.80	3.20	2.40
Spinners:				
Men	5.20	5.00	7.50 to 8.87½	5.00
Women	1.80	.....	3.00 to 3.30	3.00
Winders:				
Men	2.80	3.00	.....	.....
Women	2.60	1.60	3.20 to 3.40	2.52
Fasteners:				
Adults	3.20 to 3.40	3.20	4.40	2.52
Minors	1.00 to 1.80	1.80	2.75 to 3.25	1.92
Weavers of unbleached cloth:				
1 and 2 looms	3.00 to 3.20	2.40	4.00	3.96
4 looms	(*)	3.20 to 3.40	5.20	4.20
6 looms	(*)	(*)	6.65	(*)
Weavers of colored cloth:				
1 loom	.....	1.60 to 1.80	.....	3.60
2 looms	3.00 to 3.20	3.40 to 3.80	.....	3.96

* Do not exist.

Table showing the weekly wages paid in the cotton industry, etc.—Continued.

Classification.	France (72 hours).	Spain (64 hours).	Russian Poland (72 to 78 hours).	British India (Bombay, 63 to 66 hours).
First foreman for preparing cotton	$7.00 to $8.00	$8.00	$9.00	$10.00 to $16.66
Second foreman for preparing cotton	6.00	4.00	8.00	4.00 to 5.00
First foreman for spinning mill	7.00 to 8.00	8.00	9.00	10.00 to 16.66
Second foreman for spinning mill	6.00	4.00	8.00	4.00 to 5.00
Foreman for weaving	7.20 to 8.00	$7.00 to 10.00	$9.00 to 10.00	10.00 to 16.66
Carpenter	7.20	5.00 to 6.00	3.60	1.33 to 2.66
Mason	6.60	5.00 to 6.00	2.50	.....
Blacksmith	6.48	5.00 to 6.00	3.50	1.33 to 2.66
First stoker	5.60	5.00 to 6.00	3.20	1.00 to 1.66
Second stoker	3.60	4.00 to 5.00	.....	.....
Engineer	7.00 to 8.00	8.00 to 10.00	6.00	2.66 to 4.00
First oiler	6.00	4.00 to 5.00	3.25	1.64
Second oiler	.....	.....	2.75	1.00
Workmen tending beating machines	3.60 to 4.20	3.60 to 4.00	2.25	.....
Card-sharpeners	4.40 to 4.80	3.60	3.20	.66 to 1.00
Carders:				
Men	4.20	3.60 to 4.00	2.25	1.00 to 1.20
Women	2.10		2.25	1.00 to 1.33
Workers of spindle frames (women)	3.00 to 4.20	2.80 to 3.00	2.12½	.....
Bobbin-winders:				
Men	2.40 to 3.00	2.80 to 3.60	.....	.....
Women	1.80		1.20	.73 to .93
Spinners:				
Men	6.00	5.00 to 6.00	3.25 to 4.75	.....
Women	4.20	.....	1.50 to 1.75	1.00 to 1.10
Winders:				
Men	3.60	3.60	2.50 to 3.00	.....
Women	2.40	2.80	.....	.33 to .60
Fasteners:				
Adults	2.70	2.40 to 3.20	1.65	.....
Minors	2.10	1.20 to 1.80	1.20	.73 to .93
Weavers of unbleached cloth:				
1 and 2 looms	3.60	3.60 to 4.80	2.25 to 3.00	.60 to .80
4 looms	(*)	.....	.....	.93 to 2.00
6 looms	(*)	.....	.....	.....
Weavers of colored cloth:				
1 loom	(*)	.....	.....	.....
2 looms	3.60 to 4.20	5.00	.....	.....

* Do not exist.

Table showing the weekly wages paid in the cotton industry, etc.—Continued.

Classification.	United States.			
	Massachusetts (60 hours).	Pennsylvania (60 hours).	Georgia (60 hours).	Virginia (60 hours).
First foreman for preparing cotton	$16.50 to $20.00	$25.00	$18.00	$15.00
Second foreman for preparing cotton		$16.00 to 18.00	9.00	9.00
First foreman for spinning mill	18.00 to 22.50	15.00 to 20.00	18.00	15.00
Second foreman for spinning mill		12.00 to 15.00	10.50	7.50
Foreman for weaving	18.00 to 21.00	15.00		18.00
Carpenter	13.50	15.00		10.50
Mason	18.00	15.00		$10.50 to 12.00
Blacksmith	12.00 to 13.50	18.00		12.00
First stoker	10.00	12.00	9.00	7.50
Second stoker		10.00		6.00
Engineer	10.20 to 12.90	15.00	15.00	15.00 to 18.00
First oiler	5.40	9.00		6.00
Workmen tending beating machines		7.00 to 8.00		5.40
Card-sharpeners	7.20	8.00 to 10.00	9.00	7.50
Carders:				
Men	6.72	14.00		5.40 to 6.00
Women				3.60 to 3.80
Workers of spindle frames (women)	4.50 to 6.00	5.00 to 6.00		4.50 to 4.80
Bobbin-winders:				
Men	7.50	4.00 to 5.00		3.00
Women	6.00			
Spinners (men)		10.00	9.95	3.60 to 3.80
Winders:				
Men	6.00	4.00 to 5.00		3.60
Women	6.00			
Fasteners:				
Adults		5.00		
Minors	3.90			
Weavers of unbleached cloth:				
1 and 2 looms	3.60			
4 looms	4.00 to 4.20			
6 looms	7.00			
Weavers of colored cloth:		12.00 to 17.00		
1 loom				
2 looms				

NOTES BY MR. STRAUSS.

Belgium.—General tariff slightly protective; tariff on cotton manufactures highly protective. The factories wished to introduce weaving with four looms, which had given such good results in England and the United States, but the workmen objected and in 1885 struck on that account. In England and in the United States weaving is done with as many as ten looms.

Holland.—Tariff fairly free, both general and special (cotton goods).

England.—Free trade.

Switzerland.—Tariff fairly free, both general and special.

France.—Tariff highly protective.

Spain.—Tariff highly protective. Information furnished by the Belgian consul and factories at Barcelona. No note has been made of the loss by exchange, making the salaries 15

to 20 per cent less in value. The great number of fêtes in Spain, as well as the local fêtes of each village, has an influence on the cost of the production of all manufacturing industries, since the general expenses are the same for the complete week as for a week in which occur holidays when the people do not work.

Russian Poland.—Tariff highly protective.

British India.—Free trade. Information obtained from the bureau of statistics of the department of finance and of the commerce of India, 1892, and also from the factories of Bombay. The rupee is taken at 1.50 francs (30 cents). The figures in the table are based on the cotton industry of the Bombay Presidency. In the north the workmen gain 43 cents per week and the women 20 cents.

United States.—Tariff highly protective. Statistics obtained from the Belgian consul-general.

EXPORTS FROM ONTARIO TO THE UNITED STATES.

REPORT BY CONSUL MONAGHAN, OF HAMILTON.

The volume of business has been falling off since October, 1890, when the present customs laws became operative; but the minimum has probably been reached, as the articles most affected by said laws have practically dropped out of the list of merchandise exported from the district.

Apples show a decrease of $7,500, which is largely due to the duty of 25 cents per bushel.

Barley presents the most startling decrease, which is entirely due to the duty of 30 cents per bushel. The trade will hardly revive until the duty is reduced at least one-half. Exports in 1890 amounted to $602,296.99; in 1891 it dropped to $336,588, and to $44,770 during the year just closed. In 1890 the value of barley exported more than equals the total value of all exports from the district in 1892. The bureau of industries of Ontario estimates the acreage and production of barley during the present year at 499,225 acres and 13,376,586 bushels, being the smallest crop raised in the province for many years. Last year the acreage was 553,166 acres and the production 16,141,904 bushels. The average yearly acreage and production during the past ten years have been 743,245 acres and 19,349,351 bushels. The British market has not, as yet, taken the place of the American market for Canada's barley.

The next noticeable decrease appears in the egg trade, which has fallen from $158,160 in 1890 to $39,865.64 during the last fiscal year.

There is a slight decrease in the horse business, notwithstanding that very good horses can be bought in this market at from $75 to $100. And, as many of the cities of the Dominion, profiting by the experience of the "Yankees," are adopting the trolley system for street railways, the effect will be to still further reduce the value of horses, and to a point where the horse trade may again become profitable for dealers from the United States.

The large decrease exhibited in the value of the goods exported by emigrants (so called) is not real, because the certificate issued by consular officers to persons removing to the United States was discontinued for almost

the whole of the past fiscal year; and consequently no data was obtainable during that time. In my opinion the real figures would show a large increase. Emigration from this district is increasing, and, as a rule, it consists of a good class of people. Many English, Scotch, and Irish artisans who are disappointed in securing employment largely constitute the list. A small number keep shifting between the border cities, but the care exercised by the Government officers at Buffalo and elsewhere on the border has had the effect of breaking up this practice to some extent. Bricklayers, stone masons, and carpenters have been in the habit for years of vacillating between the cities and towns in Canada and Buffalo, Rochester, Detroit, Cleveland, Erie, and Lockport and maintaining their residence and citizenship in the Dominion, going over when business in their line is slack and returning to their homes when they can secure employment. I have noticed that many of that class are removing their families to some of the cities named and stating their intention to become permanent residents of the United States.

Sheep and lambs show an increase of $3,728.80, which is practically all in lambs, as comparatively few sheep are exported. The duty of $1.50 operates to prevent, whereas the specific charge on lambs is about what the ad valorum duty amounted to under the former law; hence it is that Canada's lambs continue to go over the border to be slaughtered.

The decrease in stone of $5,373 simply means that the stone used in the construction of the St. Clair tunnel, at Sarnia and Port Huron, was shipped from the quarry of the Grand Trunk contractor a few miles east of this city, and with the completion of said tunnel exports in stone ceased.

The increase of $20,364 in tea may be accounted for on the ground that American dealers ship large quantities direct to Canada in order to compete successfully for the Dominion trade, which they could not do if teas were exported from the United States, because of the 10 per cent duty, which doubtless has a tendency to divert business to Canadian Pacific Railway steamers and railway. The surplus after supplying Canadian customers is shipped to New York and Chicago, as a rule.

The decrease of $19,000 which appears in the turnip trade is not real. The apparent decrease is caused by the rule of the Treasury Department permitting shipments of $100 or less in value to pass the customs without consular invoices, which must occasion a heavy loss in the revenue heretofore derived from the consular service, at least from Canada. It is notorious that small shippers take advantage of this rule and divide their shipments to keep within the liberal limit thus provided. The rule practically discontinues the issuance of certified invoices for which the Government charges a fee of $1. I respectfully submit that the rule and not the fee ought to be discontinued so far as it applies to exports from Canada, as the discretionary clause of said rule is practically a dead letter.

Coming down to the last and most important item in the statement, I would say that the large increase in the wool business last year, in the face of the increased duty, may be accounted for by the fact that the Canadian

wool-grower sold his clip at from 17½ to 19 cents, thereby enabling dealers to export as heretofore and compete with American wool of a like grade. The largest dealers in Ontario reside in this city, and from what I can learn last year's clip yielded but a slight margin and large quantities were sold without any profit merely to retain business connections. The clip this year is fairly good only. The shrinkage is said to be quite heavy on account of the inclemency of the season. The price at the opening was below that of last year, and continues to be; it runs between 16½ and 18 cents, rarely exceeding the latter figures and generally below them, except for most choice. While the increase of 1892 is large, the net increase over 1890 is only about $15,000; and it is very doubtful if the wool exports of the current fiscal year will equal the last. Let it be understood that the prices quoted are those at which the exporter buys the wool from the small dealers, who buy direct from the growers, who probably sell for about 16 cents.

CANADIAN STATISTICS.

The following statistics are gleaned from recent reports, and, being interesting, I beg to make them a part of this report. As they are taken from a verified statement, they are doubtless reliable. The number of miles of railway completed in the Dominion was 14,633 and the capital paid $816,622,758. There are 14,000 miles of railway in operation. The earnings of these are $48,192,099 and the working expenses $34,960,449. The net earnings are placed at $13,231,649. The passengers carried were 13,222,568 and the freight 21,752,290 tons, while the train mileage was 43,399,178. The table of fatal accidents is as follows: Passengers killed, 13; employés killed, 65; others killed, 118. Government and municipal loans promised to railways completed and under construction amount to $192,470,033. Of this amount $146,791,274 is from the Dominion.

WM. MONAGHAN,

UNITED STATES CONSULATE, *Consul.*

Hamilton, August 20, 1892.

AMERICAN, RUSSIAN, AND SUMATRA PETROLEUM.

REPORT BY CONSUL WILDMAN, OF SINGAPORE.

The only import of the Straits Settlements from the United States of any moment is petroleum. For years it held a monopoly of this market. Russian case oil, since February, 1888, has been gradually working its way in until to-day its shipments equal those of the United States. As the amount of oil shipments from the United States decreased, the number of American sailing vessels fell off, until it was found difficult to obtain bottoms in which to ship rattans and gambier to the United States, causing great inconvenience to shippers and loss to the American carrying trade; for, unless American bottoms could obtain cargoes for Singapore, they could not contract for return cargoes. This state of affairs has gone on from year to year up to

the present date, when it now looks not only as though the American flag would be banished from the Roads, but the entire case-oil trade with the United States driven out of the market. Two circumstances have conspired to bring about this result—the introduction of tank steamers loaded with Russian oil and the discovery of a new oil field at Langkat, Sumatra.

The Russian oil syndicate is working energetically to accomplish this end. They have erected receiving tanks on an island in the harbor, and their first tank steamer is expected by the 1st of September.

The market here has already anticipated the fall in the price of oil that will occur when this system commences to operate by forming a syndicate for the control of the oil now on hand and such as has been ordered. They have put the price up from $1.80 per case to $2.30, hoping that between now and the 1st of September they will be able to cover any losses caused by the expected fall in prices.

It appears that the determination to revolutionize the export trade of petroleum from Batoum by substituting tank steamers for the ordinary method was due to the unprecedented increase in the production of oil from the Bakoo wells, which reduced the price from 2*s.* per barrel to 2½*d.* In 1890 the number of wells was three hundred and fifteen, yielding 4,670,000 tons, of which about one-half was exported. At the end of the year seventy-seven new wells were in operation, increasing the output of crude oil by 20,000 tons per diem, the average price per barrel in that year having been reduced to 1*s.* 3*d.* In 1891 the price fell first to 1*s.* per barrel and touched the lowest point at 2½*d.*, a fall exceeding in rapidity that of silver itself. Of course, such a price could not pay, and some of the producers failed. Shipments increased, but not to the extent necessary to get rid of the glut of oil. Something had to be done. The suggestion to build tank steamers of an improved type which could carry large quantities of oil at a cheap rate to the eastern markets was welcomed, and the Rothschilds, who have largely aided the Batoum trade financially, were favorably impressed with the idea.

The second feature that threatens the American trade, as I have said, is the newly discovered oil field in Sumatra.

United States Vice-Consul James Lyall, who is the secretary of the oil syndicate already mentioned, says, in regard to this field, in his oil circulars for the quarter ended June 30, 1892:

> But the most important feature now before the trade is the new oil field, for some time known, but only recently become productive, in the northern part of the island of Sumatra, in the state of Langkat, with a seaboard on the Straits of Malacca. Concessions have been granted by the Dutch Government to both Dutch and English capitalists, but so far a Dutch company is the only one which has got to work, and after a commencement within the last twelve months it is now reported to be producing from 15,000 to 20,000 cases per month, with a steadily increasing output. Altogether, concessions have been granted for some 320 square miles of what has been pronounced by experts to be a very rich oil-producing territory; and, being on the seacoast and not, like the American and Russian oil fields, far inland and having besides an excellent deep-water, well-sheltered harbor, its position may be said to be

unique. Also, the kerosene produced at Langkat is proved by a skilled English engineer to be of first-rate quality, being "water white," absolutely without "bloom," flashing by Abel's test at 83° to 86°, and burning at 124° to 126°, the percentage of kerosene yielding being fully equal to good American and quite double that of Russian petroleum. When it is borne in mind that the Russian output in 1891 was 34,000,000 barrels, the bulk of which was obtained from an area of about 7 square miles of the oil field near Bakoo, the capabilities of the new oil field in Sumatra may be judged, supposing it turns out all that is said about it.

I have talked with Americans who came from Pennsylvania to take charge of the refining of the oil, and they corroborate everything stated by Mr. Lyall and claim for the new field a promising future. Of course, if the Langkat wells prove to be all that is claimed for them and the Russian tank steamers turn out a success, the only hope that American oil has in this part of the world lies in the adoption of the tank system, and, unless both are failures, the little carrying trade that is now done by American bottoms will cease. I have repeatedly pointed out that the American interests here and all along the coast suffer from the want of attention, and that a big American firm would go far to remedy such a state of affairs.

The figures below, taken from the Colonial Blue Book for the year 1891, will give an idea of the oil trade of Singapore for the past five years. It will be seen that the total import for the year 1891 is below that of the two previous years, but quite up to the average.

Table showing the imports of oil at Singapore from 1887 to 1891.

Year.	United States.	Russia.	Burmah.	Other places.	Total.
	Cases.	*Cases.*	*Cases.*	*Cases.*	*Cases.*
1887.....	311,960	.....	.....	3,110	315,070
1888.....	369,744	227,170	.....	22,600	619,514
1889.....	510,365	367,383	.....	2,000	879,748
1890.....	436,900	444,900	30	437	882,267
1891.....	397,971	362,006	548	101	760,686

The consumption per month averaged from 34,000 to 38,000 cases.

The question, of course, for American shippers to decide is whether the trade is worth saving.

The Standard Oil Company of the United States evidently thinks the matter worth looking into, as during the past month it has had two agents here looking over the field.

I append an editorial clipping from the Singapore Straits-Times of July 27, 1892, on the subject, which I think puts the entire subject in a nutshell.

LANGKAT PETROLEUM.

Petroleum from Langkat, in East Sumatra, now such a disturbing element in the oil market, has only lately come into prominence from being pushed to the front by a company started in Holland. That company, through concessions from native chiefs, had secured large tracts of oil-bearing land in that section of Sumatra, but at the outset working the petroleum wells met with serious difficulty from the inexperience of those in charge. Trial borings soon, however, disclosed the alleged fact that the land under concession contained abundance

of petroleum, so that every well sunk yields copiously. Experience and knowledge of the work apparently soon so improved matters that the report of the company just issued anticipates an outturn of 1,000 cases a day before the end of the year, the intention being to increase the output to 2,000 cases a day before the end of 1893. The land under the control of the company borders on Aru Bay, which is the only seaport in the Straits of Malacca on the east coast of Sumatra which is accessible to large vessels; and the company expects to distribute a handsome dividend on the expected outturn of 1,000 cases a day, as it has now rights over 40,000 hectares of land. In the report much is made of the fact that the oil brought to market has met with a favorable reception at Penang, and that the lower cost of production will prove to be an advantage against American and Russian competition. The company also contemplates the building of tank vessels to convey oil from Langkat to the Straits ports, which are only a few hours' steam distant, and has taken steps to raise additional capital. The chairman, at a meeting of shareholders on the 7th of June, mentioned as an encouraging sign that petroleum which, on a yield of 1,000 cases a day, cost the company only $1 per case could be sold in Penang at a profit for $1.40 per case. The various influences at work in the petroleum oil trade in the far East generally and Singapore especially are such that prices will run down to an exceedingly low ebb, so low, in fact, that the largest and wealthiest of concerns now under way must necessarily come out on top. There is already the nearly finished tank for Batoum oil at Pulau Bukum; there is the Langkat field with prospect of a considerable output with a complement of bulk tanks; there is the large American case-oil trade, which, until recently, wholly supplied Singapore; and now there has just arrived at Singapore an agent of the Standard Oil Company of the United States, who has come with a view of seeing whether the market here can not be worked so as to operate against the Samuel's syndicate. In a word, the object of the Standard Company's agent is competition. He will look over the Langkat field and consider the prospects of its product as affecting the market in the Straits, and he will look about to see if petroleum tanks need be erected at some convenient spot so as to be in close competition with those at Pulau Bukum.

ROUNSEVELLE WILDMAN,
Consul.

UNITED STATES CONSULATE,
Singapore, August 5, 1892.

MINING LAWS OF MEXICO.

REPORT BY MINISTER RYAN.

I have the honor to transmit herewith, for the information and use of the Department, a pamphlet published by Mr. F. P. Hoeck, of this capital, containing what is believed to be a faithful copy and translation of the new mining code of Mexico, which went into effect on the first day of the current fiscal year, July 1, 1892.

THOMAS RYAN,
Minister.

UNITED STATES LEGATION,
Mexico, August 22, 1892.

MINING LAWS OF MEXICO.

[Inclosure 1 in Minister Ryan's report.]

SECTION I.—ABOUT MINES AND MINING PROPERTY.

ARTICLE 1. Mining property in the United States of Mexico shall be governed by the following bases, which will be regulated by the Executive Government in accordance with its constitutional faculties.

ART. 2. Subject to the present law are those mineral substances which can not be worked unless a previous concession be obtained and those for whose extraction work is required which may put in danger the lives of the workmen, the safety of the workings, or the stability of the surface.

ART. 3. The mineral substances for working which a previous concession is required under any circumstances are those which are hereafter enumerated, whatever be the nature, shape, or situation of their respective ore bodies:

(*a*) Gold, platinum, silver, quicksilver, iron (except marsh ores, loose surface ores, and ochers which are worked as coloring matter), lead, copper, tin (except float tin), zinc, antimony, nickel, cobalt, manganese, bismuth, and arsenic, be they found in native state or mineralized.

(*b*) Precious stones, rock salt, and sulphur.

ART. 4. The owner of the ground can work freely, without necessity for a special concession in any case whatever, the following mineral substances:

The mineral combustibles, oils, and mineral waters; the rocks of the ground in general, whether they serve directly or form part of materials for construction or ornamentation; the matter which forms the ground, as earths, sands, and clays of all kinds; the mineral substances excepted from concession in article 3 of this law, and generally all those that are not mentioned in the same.

Superficial or subterraneous excavations which the working of any of these substances may require shall always be subject to the regulations which are decreed for order and security in the mines.

ART. 5. Legally acquired mining property and that which in future will be acquired in accordance with this law shall be irrevocable and perpetual as long as the federal property tax has been paid in accordance with the regulations of the law by which said tax is established.

ART. 6. The newly acquired primordial mining title will be given by the department of development according to the regulations of this law.

ART. 7. Mining property, except in the case of placers and superficial ore bodies, is understood to be only underground and does not include the surface, which continues under the dominion of its owner, except that part of the same which the miner has to occupy in the cases and under the conditions mentioned in article 11 of this section.

ART. 8. The taking out of produce from a mine is completely limited by the respective boundaries and only can these boundaries be passed in accordance with the provisions of the regulations when the ground is unoccupied and after previous request for the respective amplification of the concession.

In order to enter into another's field, the consent of the owner is absolutely necessary, except in cases of legal right of way.

ART. 9. The water brought to the surface and coming from subterraneous workings of mines belongs to the owners of the same, and the regulations of the common law have to be observed in regard to the rights of owners of the ground through which these waters pass.

ART. 10. The work done for opening and utilizing mines and placers is for public benefit; therefore, in case of nonagreement, forcible expropriation can be proceeded with for the ground necessary for this object.

ART. 11. The mining concessionist is free to make arrangements with the owners of the surface ground for the occupation of the surface he needs, in order either to work placers or superficial ore bodies or to establish buildings and other mining requirements; but, in case

both parties do not come to an agreement in regard to extent or price, the expropriation will be proceeded with through means of the local judge of first instance, the following proceedings being observed until article 27 of the constitution be regulated:

(1) Each party shall name an appraising expert, and both experts shall present their valuation within eight days' time, counted from the day they received their appointment. If the appraisers do not agree, the judge will name a third expert as umpire, who shall give his decision within the peremptory time of eight days, counted from his appointment. The judge, taking into account the opinions of the experts and the proofs which both parties present to him whilst the experts are preparing their statements, shall fix the superficial extent and the amount of the indemnity within the next eight days following. The decision of the judge shall be binding, and against it there shall be no other recourse but that of responsibility.

(2) In case the owner of the ground which needs to be occupied does not name his appraising expert within eight days after being notified by the judge, this functionary shall officially name an appraiser to represent the interest of the owner.

(3) In case it be uncertain or doubtful who is the possessor or owner of the property which has to be occupied, the judge shall decide as amount of indemnity the sum resulting from the appraisements of the expert named by the concessionaire and of the one which he himself appointed in representation of the legitimate owner and shall make deposit of said amount in order that the same be delivered to the corresponding party.

(4) The experts in making their appraisements shall base these on the value of the surface ground, the damage which immediately results to the property, and the rights of way which are to be established on the same.

ART. 12. Mining property and other ordinary property bounding on it shall, as the case may be, have the privilege of and be subject to legal right of way as regards free passage, conveyance of water, drainage, and ventilation; and the judges shall conform in their decrees regarding the same and the corresponding indemnities to the legislation of each State, federal district, or territory, unless the same be modified by the following ruling:

(1) The legal right of way of drainage consists, on the one hand, in the obligation which, according to article 21 of this law, the owner of a mining field is under to indemnify the owner of another field for the damage done to him by not keeping up the drainage of the subterraneous workings or not draining sufficient to keep the water from flowing from one to the other; on the other hand, in the obligation which all owners of mining fields are under to permit the passage through their ground of tunnels or adits whose exclusive and necessary object is the drainage of one or various workings.

(2) The drainage tunnels, when not driven on the strength of the contract authorized by article 23 of this law, can only be undertaken by the owner or owners of mining fields to whom the tunnel is an absolute necessity.

(3) In the case supposed by the foregoing clause all the owners of mining fields which derive benefit from the drainage obtained through the tunnel shall be obliged to pay their part of the indemnification in proportion to the benefits received, taking into consideration the nature and the condition of the mine.

(4) The driving of a tunnel shall not be commenced without previous permission given by the department of development, after hearing the opinion of the respective mining agent and after examination and approbation of the drawings, in which the direction and the section of the projected tunnel shall be detailed.

(5) The paying ore found while driving the tunnel shall belong, in case it is encountered in lawfully conceded mining fields, to the owners of these, and, if found in unoccupied ground, it shall be divided amongst the owners of all the fields which are benefited by the tunnel in the proportion established by the foregoing clause 3.

(6) If, when a tunnel is being driven and one or more veins are discovered in unoccupied ground, a request be made for the grant of the respective fields or of the unoccupied surplus parts, then the orders of articles 14 and 17 relative to this law shall be applied, considering

those who undertook to drive the tunnel as explorers; in accordance with the final part of article 13.

(7) Once the permission mentioned in the foregoing clause 4 being given by the department of development, only in virtue of a special contract can other persons but those who receive benefit from the tunnel be considered as members of the undertaking.

(8) While the tunnel is being driven in his or their respective properties, the owners of mining fields which are crossed by the drainage tunnel can appoint a controller in their confidence, whose functions shall only extend to watching the work and giving notice to the mining agent or to the judge, as the case may require, of any abuse he may observe.

(9) In those places of the drainage tunnels which, through whatever reason, do communicate with mine workings bars shall be put up which impede roadway or passage as soon as the communication is made.

(10) Only in virtue of a unanimous understanding, expressed in a public document, between the parties interested in a general drainage tunnel in accordance with the foregoing clause 3 can the tunnel be used for any other object but drainage. In this case, under penalty of nullity, all particulars regarding passage or transit indicated in the foregoing clause 9 shall be stated in the contract.

(11) The mines newly opened in places where they may be benefited by general drainage tunnels already existing will be subject to the provisions of clauses 3, 7, 8, 9, and 10.

(12) The legal right of way for ventilation consists in the obligation of every owner of mining fields to permit the owners of neighboring fields to communicate with his underground workings, so that the communication may produce as a necessary result the ventilation which could not be obtained in other ways except at great expense.

(13) Unless by special contract to the contrary, made into a public document by the owners of the properties giving and receiving the benefit, there shall always be placed a barred grating to impede transit or passage at the boundary line of the respective properties.

(14) When a communication different from the one described in clause 12 actually ventilates one or more workings, neither this service of producing ventilation shall give a right to the miner who made the communication to exact indemnity from the owners of the other workings that have been ventilated, nor shall these on their side acquire a legal right of way which burdens the mining property which furnished the ventilation.

(15) If, while driving workings opened for the purposes mentioned in clause 12, paying ore be found, the provisions suitable to the case of clauses 5, 6, and 8 shall be observed.

(16) Also, the provisions of clause 4 shall be observed as far as they suit the case.

(17) All the expenses occasioned by the workings which may have to be made in order to obtain ventilation and those for keeping them in future in good condition shall be exclusively for account of the party who requested the establishment of the right of way (of ventilation).

(18) For the establishment in future of a legal right of way to the benefit of one mining property and to the burden of another there shall be necessary either the consent of the owner of the burdened property, stated in a public document or in a declaration signed and ratified before the judicial authorities, or an administrative resolution agreed to by the interested parties, or a judicial sentence.

(19) The owner of mining fields who wishes to acquire a legal right of way which does not receive the consent of the party who considers himself burdened by the same shall apply to the department of development, which shall decide, within the space of time and with the formalities established by the regulations, whatever it judges opportune, always hearing beforehand the dissenting party. In case either the latter or the petitioner do not agree to the administrative resolution, the right is reserved to them to apply to the respective local tribunals within the time specified by the regulations. The decision shall be communicated by the tribunal which gives the same to the department of development.

(20) In case the administrative decision be favorable to the petitioner and adverse to the opposing party, it can only be acted upon immediately by the petitioner giving bonds, satis-

factory to the department of development, for the indemnification of any damages in case the opposing party receive judgment in his favor in the courts.

(21) The ruling of the three preceding clauses is applicable to all cases in which that which is ordered in the other clauses may give rise to judicial contests.

SECTION II.—ABOUT EXPLORATIONS, MINING FIELDS, AND MINERAL CONCESSIONS.

ART. 13. Any inhabitant of the Republic can freely make, in Government ground, explorations conducive to the discovery of mineral bodies; but if, instead of borings, excavations should be made, these shall not exceed 10 meters in extent, neither in length nor in depth. No license shall be necessary for this work, but previous notice shall be given to the respective authorities, according to the provisions of the regulations.

In ground of private property no mining explorations can be made without the permission of the owner or his representative. In case, however, this permission can not be obtained, it can be requested from the respective administrative authorities, who shall give the same in accordance with the provisions of the regulations, bonds being previously given by the explorer for the damage which may be caused, to the satisfaction of the authorities, after hearing the owner of the ground or his representative.

Inside of private buildings or their belongings explorations can only be made with permission of the owner. No explorations shall be permitted inside the precincts of populated places, public works, public buildings or fortifications, or in their neighborhood. The regulations shall fix in all these cases the minimum distance within which said works of investigation can be allowed.

During three months' time, which can not be prorogued, counted from the date of the notice of the permission or of the administrative resolution mentioned in this article, only the explorer shall have the right to receive mining fields.

ART. 14. The unit of concession, or the mining field (*pertenencia*), in future shall be a solid block of unlimited depth, defined above ground by that part of the surface which in horizontal projection gives a square with sides 100 meters long and bounded underground by the four vertical planes corresponding to the same.

The unit of mining field (*pertenencia*) is indivisible in all contracts made about mining concessions or which affect the ownership.

ART. 15. Except as regards the final disposition of article 13 of this law, the concessions shall belong and shall always be given to the first applicant and shall embrace, in all cases in which there is sufficient free ground, the number of mining fields which the interested party may ask for; but he shall clearly specify, in accordance with the dispositions of the regulations, the situation which the fields (*pertenencias*) which form his grant occupy.

In case there remain between the mining fields granted and others already existing a space less than the unit of mining grants, this space shall also correspond and be given in property to the first petitioner.

SECTION III.—ABOUT THE MODE OF ACQUIRING MINING CONCESSIONS.

ART. 16. The department of state and of the expedition of development shall name in the States, territories, and in the federal district special agents in its service, before whom the applications for mining concessions shall be presented. These agents are authorized to collect fees according to the tariff to be fixed by the department mentioned.

ART. 17. The agents of the department of development shall receive the applications for mining concessions and shall note down immediately on the register the day and hour of presentation. They shall thereupon proceed with the publication of the application and the measurement of the fields (*pertenencias*) by the expert or the practical man whom they shall appoint, and, in case there be no opposition, they shall send a copy of the proceedings and of the map to the department of development for the corresponding approbation and the extension of the titles.

The regulations shall fix the time within which these acts have to take place and shall detail the mode of procedure of the agents.

ART. 18. The approbation of the proceedings being obtained and the title to the property having been given in favor of the concessionaire, the latter enters into possession of the mining fields without further formality.

ART. 19. The agents of the department can not suspend the proceedings for any reason whatever, unless there be opposition. When once the time is up which is fixed by the regulations, they shall be obliged immediately to send the protocol of the proceedings, in whatever condition it may be, to the department of fomento, so that after examination it declare the tardy applicant rejected, should the fault be his, or hold the agent responsible, if through him the case has been delayed. The tardy applicant can not again petition for the same concession.

ART. 20. When opposition is made by the owner of the surface ground to the request for any mining concession or to the making of the respective measurements, and he claims that the ore deposit does not exist, then, if there be found indications of a deposit on the surface or any excavations or workings of exploration in the deposit itself, the agent of the department of development shall reject the opposition. In case no indications of any ore body exist on the surface of the ground and there be no excavations or workings on the same, then a proceeding analogous to section II of this law shall be followed, the respective judge deciding whether or not the concessions shall be granted. His decision can be appealed against in both cases. The decree shall be communicated to the department of development.

ART. 21. The agents of the department of development shall suspend proceedings, in case there be opposition, and shall send the protocol to the judge of first instance of the respective place for the legal decision of the corresponding judgment. The judicial authorities shall advise the department of development of their decision.

SECTION IV.—GENERAL DISPOSITIONS.

ART. 22. The working of mineral substances, whether they belong to those that are acquired through a concession according to this law or to those that belong to the owner of the surface, shall be subject to all the dispositions which the provisions of this law may dictate in regard to police regulations and the security of the workings themselves; but if the owners conform to the regulations, they will, on the other hand, have complete liberty of industrial action, to work in the way that suits them best, to hurry, delay, or suspend for more or less time their work, to employ the number of workmen they wish and wherever it suits them best, and finally to follow whatever system they prefer as regards workings, extraction, drainage, or ventilation as they consider most suitable to their own interests. The owners, however, remain responsible for the accidents which happen in the mines on account of their being worked badly and for damages occasioned to other properties by reason of not taking out water or any other circumstance which may impair the interests of others.

ART. 23. When, in order to hurry the work in the mines of a locality, the necessity arises for making drainage tunnels, the execution of these workings shall be a matter of contract between the interested parties.

ART. 24. The partnerships or companies formed for working mines shall be governed by the dispositions of the commercial code, except as regards association, which are not admissible in mining matters.

ART. 25. The contracts for furnishing money to the miner, named until to-day "avío," shall in future have the character either of partnership, in which case the provisions of the foregoing articles shall be observed, or of mortgage. The mortgage in mining matters can be freely given in accordance with the regulations of the civil code of the federal district; but the indivisibility of the mining field (*pertenencias*), established in article 14 of this law, shall be taken into account, and the regulations of the commercial code as regards the register shall be observed, and for this purpose a special book of mining operations shall be opened. The holder of the mortgage shall always have the right to pay the tax mentioned in article 5 of this law and shall, through this payment, acquire a right of preference over the owner of the mine in regard to his own mortgage.

ART. 26. The mortgage may be divided into mortgage bonds to name or to bearer, either in the titles which constitute the debt or by a later document. In every case it shall contain the dispositions organizing the social representation of the holders of the bonds. These dispositions, and also those relating to the amount of the debt, to the conditions of the same, and to the guaranty, shall appear in print on each of the mortgage bonds.

The holders of the mortgage bonds can only take action against the debtor or the mortgaged property through their common representative, whose acts as regards their rights shall be obligatory on all the holders.

ART. 27. The trials by court in mining matters shall take place and be decided in the federal district and territories and in each State before the judges and tribunals which there are competent according to the regulations of the commercial code, and also shall be observed that which is prescribed in chapter 9, title 1, book 4, of said mercantile code, based on this, that the first expense of the administration indicated in the second clause of article 1030 of the same code is the payment of the tax.

ART. 28. The new tax which shall be paid by all mining concessions, with the exception of those which are expressly exempt by contract, shall be a federal tax on the property and shall be established by the respective special law.

As regards the other taxes on mining, the dispositions of the law of June 6, 1887, shall be observed.

ART. 29. Default of payment of the property tax, levied in accordance with the regulations and procedure of the law which establishes the same, shall constitute, from the date that this present law goes into force, the only reason for forfeiture of mining property, which in this case remains free of all burden and shall be conceded to the first applicant, in accordance with the provisions of this law and its regulations.

ART. 30. The industrial branch of mining shall belong to the department of state and of the expedition of development, colonization, and industry, which therefore can dictate, in accordance with the regulations of this law, all the measures it judges necessary for the promotion of the prosperity of the mining industry and which shall watch that the said law be enforced. It shall name the inspecting mining engineers it may think necessary to visit the workings of mines or mineral substances, to study the same, to make investigations, and to fulfill in general whatever commissions the department may give them, in accordance with the details prescribed by the regulations.

ART. 31. The Executive Government shall fix, according to the terms of article 21 of the federal constitution, the governmental punishments which those incur who infringe the dispositions of the regulations which it issues for the enactment of this law.

The official transgressions for which the agents of the department of development are responsible shall be judged by the judges of the corresponding district according to the respective laws.

The ordinary transgressions committed in the mines remain subject to the corresponding territorial judges; this, however, shall not interfere with the governmental punishment should the administrative federal authorities impose same.

ART. 32. The establishment and working of mills and all kinds of metallurgical works shall be guided by the regulations of the common law and, as regards taxes, by those of the law of June, 1887.

ART. 33. There remains exempt from taxes that part of the tunnels situated outside of properties when these are destined exclusively for the ventilating, draining, and extracting of minerals that do not proceed from the said tunnels.

SECTION V.—TRANSITORY PROVISIONS.

ART. 1. The denouncements of mines or surplus ground (*demasías*) which are in procedure when this law goes into force shall be continued and substantiated and shall be decided according to the provisions of the same.

ART. 2. The surplus ground or open spaces existing between neighboring mining properties and which have not been denounced when this law takes effect shall correspond and shall be given to the first party who applies for the same.

ART. 3. The contracts for the exploration and working of mining zones made with the department of state and expedition of development, colonization, and industry which are in force when this law takes effect, and in virtue of which the concessionaires are complying with the respective stipulations, shall remain in force for the whole time of their duration if the concessionaires so desire. The concessionaire can, however, within a year's time, counted from the date this law goes into force, choose the provisions of the new law, and as soon as he makes declaration to this effect before the department he shall be relieved by the same from the obligations which said contracts imposed on him and shall receive again the corresponding deposit. Remaining subject to this law and its regulations only, he shall acquire and conserve perpetually his mining concessions as long as payment is made of the federal property tax.

ART. 4. Existing mining properties which are being worked or are held by special permit (*amparo*) when this law goes into force, notwithstanding that they are not in accordance with the same, shall remain in subsistence, and the mines shall retain their fields with whatever measures they may have, though these be different from those now established.

As regards the tax, however, the unit mentioned in article 16 of this law shall serve as a basis.

The owners, however, can ask for a rectification of the concession and for a new property title.

ART. 5. The contracts for furnishing money to the miner ("avio") and all those relating to mining business which are in existence when this law takes effect shall be governed by their respective stipulations and, as regards points which may have been omitted, by the mining law which was in force at the time these contracts were made; but it shall be indispensable to the validity of the future operations which have their origin in these contracts that these be registered according to the dispositions of articles 24 and 25 of this law within a year's time counted from the date it takes effect.

Therefore, whenever a mining business is transferred, under whatever pretext, to a third owner, the latter shall be responsible for the obligations resulting from said contracts, supposing that any question in court should arise from the same.

ART. 6. The work which is being done in the mining field (*pertenencias*) of another owner in accordance with the law still in force can not be prosecuted after the date on which this present law takes effect, unless it have the consent of the owner of this field.

FINAL PROVISIONS.

ONLY ARTICLE. This law will go into force in the whole Republic on July 1, 1892, and from that date the mining code of November 22, 1884, and the circular orders and provisions relating to the same shall be abolished.

Article 10 of the law of June 6, 1887, shall also be abolished from the date of the promulgation of this law.

ALFREDO CHAVERO,
President of the House of Representatives.
V. DE CASTAÑEDA Y NÁJERA,
President of the Senate.
JOSÉ M. GAMBOA,
Secretary of the House of Representatives.
MARIANO BÁRCENA,
Secretary of the Senate.

Therefore, I order that the same be printed, published, circulated, and given full compliance.

Given in the palace of the Executive Government of the Union, in Mexico, on the 4th day of June, 1892.

PORFIRIO DIAZ.

MINING PROPERTY TAX.

[Inclosure 2 in Minister Ryan's report.]

ARTICLE 1. In accordance with the provisions of the articles relating to the new mining law, there shall be established a federal property tax, which shall consist of two parts—one part which has to be paid once only in stamps to be fixed to all titles of mining property and the other part which has to be paid yearly for each one of the mining fields of which a grant is composed.

As regards the tax, the mining field (*pertenencia*), or unit of concession, shall be the one established by article 14 of the new mining law. Consequently all old and new mining fields existing in the Republic, whatever be their extent, shall be valued according to this unit.

For the fractions of mining fields that amount to one-half or more the tax shall be paid as if they were whole fields, and nothing shall be paid for the fraction that is less than one-half.

ART. 2. Within the unprorogable space of time, counted from the promulgation of this law until the 31st of October of the present year, every owner or actual proprietor of mines, whatever title he may have, shall be obliged to present his documents to the office of the treasury which the regulations of this law may determine, so that the new stamps of ownership of the mines may be fixed to the title and account may be taken, for the payment of the annual contribution, of the number of mining fields (*pertenencias*) which form the property, a corresponding register being opened for this purpose.

The titles which in future the department of promotion will extend in accordance with the new mining law have to carry the stamps corresponding to the same. These stamps shall be furnished by the party receiving the grant and shall be in proportion to the mining fields (*pertenencias*) which the grant contains.

ART. 3. The property stamps of the mines shall be of the value of $10, and have to be affixed to the titles of the property, one for each mining field of 10,000 square meters. The rule established in article 1 is to be followed as regards the fractions.

These stamps have to be canceled by the office of the treasury authorized to receive the titles which were extended up to the 30th of June of the present year, the department of promotion canceling those belonging to the titles which are extended in accordance with the new mining law.

ART. 4. From the 1st of July of the present year all owners or proprietors of mines shall be obliged to pay the sum of $10 annually for each one of the fields (*pertenencias*) of which their grants are composed.

The amount of the tax shall be the same whatever is the nature of the substance which is being worked, in the understanding that the mine has been acquired through denouncement or by special grant before the date on which the new mining law takes effect and that in future it shall be acquired by grant and title in accordance with the new law.

Only those mines shall be exempt from the payment of the annual contribution on mining fields and of the stamps on the titles of the property which have been expressly freed from the same by contracts made with the Executive Government in virtue of the authority given by the legislature and approved by the same. This exemption shall only last for the time stipulated in the contract, without opportunity for prorogation.

ART. 5. The yearly property tax on mines shall be paid in three advance payments during each fiscal year, this payment to be made during the first month of each one-third part of the year in the office of the treasury which the regulations of this law shall determine and to which the taxpayers are obliged to go in order to make their payments without further need of notification or any other requisite on which they might found delay or excuse.

ART. 6. Failure of presentation of the title which secures the possession of the mine within the time fixed in article 2 shall be punished by a fine equal to the amount of the stamps which the title has to carry if the same be presented within the two months following the expiration of the time allowed. For every two months more that the presentation is delayed the holder shall incur a fine equal to the amount of the stamps.

The concealment of the number of mining fields shall be punished with a fine equal to double the amount of the stamps which the title ought to have had for the conceded mining fields (*pertenencias*), to which shall be added double the amount of the yearly tax for the whole of the time that the same has not been paid. This shall not interfere with the civil or criminal responsibility to which the concealer is liable and to which he shall be subjected in due time.

Failure to pay the annual property tax within the first month of each one-third part of the year shall cause the owner to incur a fine amounting to 50 per cent of the amount of the tax in case he pay during the second month.

If the payment be made in the third month, the fine shall be equal to the amount of the tax. When once this last-named space of time has expired without the tax and the accumulated fines being paid, the mining property shall be lost to the owner without recourse whatever. The department of the treasury shall make the corresponding declaration and shall publish the same in the official paper, so that any other party may petition for the property.

ART. 7. When the owner of the mine sells the same, he shall give the respective notice for annotation in the register, and the bill of sale which is given shall carry the stamps which, according to the stamp tax, it should have.

ART. 8. In case it no longer suits any person or company to continue working the mine or mines which he or it may possess, the corresponding office of the treasury shall be advised in writing, so that the tax may be settled up to the date of the notification and the corresponding annotation be made in the register.

ALFREDO CHAVERO,
President of the House of Representatives.
V. DE CASTAÑEDA Y NÁJERA,
President of the Senate.
JUAN BRIBIESCA,
Secretary of the House of Representatives.
MARIANO BÁRCENA,
Secretary of the Senate.

Therefore, I order that the same be printed, published, circulated, and given full compliance.

Given in the palace of the Executive Government of the Union, in Mexico, on the 6th day of June, 1892.

PORFIRIO DIAZ.

REGULATIONS FOR ADMINISTRATIVE PROCEEDINGS REGARDING MINING.

[Inclosure 3 in Minister Ryan's report.]

CHAPTER I.—OF AGENTS.

ARTICLE 1. The special agents, dependent on the department of public works and appointed by said department wherever judged necessary according to article 16 of the law for any mining districts, shall receive and transmit all petitions for mining concessions and ex-

tensions presented to them and shall exercise all the other functions marked out by the law and its regulations.

In the event of any doubt on the proper application of the law, the agents shall consult the department of public works.

ART. 2. At the time of making the appointment the jurisdiction of each agent shall be clearly defined and the same, as well as any ulterior amendment thereof, published in the Diario Oficial, the Government official organ.

ART. 3. The following requirements must be complied with in order to fill the position of agent of the department, viz: The applicant must be a Mexican citizen in the possession of his legal rights, and he must fill no other Government position in the State, territory, or federal district.

ART. 4. With each agent appointed at the several mining districts a number of substitutes shall be designated in proportion to the magnitude of business developed in that district.

These substitutes must possess the same qualifications as the agents themselves and will represent the latter during any temporary or permanent absence, as well as on all occasions where legal impediment may occur, the substitute being previously called upon by the respective agents.

ART. 5. Legal impediments in the way of agents shall be considered all such as for the magistrates are set forth in fractions I to IX and XII of article 1132 of the commercial code.

ART. 6. In case of death or serious illness preventing the agent from notifying his substitute, the latter shall enter into the former's functions without loss of time, giving the department due notice thereof through the mail or by telegraph where such exists.

ART. 7. The mining agents shall give the public due notice as to their place of business and hours devoted thereto, which business shall not be interrupted, except on Sundays and national holidays.

ART. 8. The agents shall receive no other fees for their services than those set forth by the respective tariff, and in any case not specified therein they shall consult with the department as to the amount to be charged.

ART. 9. During the first ten days of each month the agent must forward to the department of public works a detailed report of all petitions for mining concessions presented to him during the previous month.

CHAPTER II.—OF EXPLORATIONS.

ART. 10. Each and every inhabitant of the Republic shall have the right to carry on mineral explorations on any section of national lands, due notice thereof being given the agent at the respective zone as prescribed by law. The notification must be tendered in duplicate, specifying therein the limits of the zone to be explored.

The agent shall return the exploring party a copy of said notification, specifying thereon the date and hour it was presented and warning the same that in the event of any digging being effected this should be done strictly in conformity with article 13 of the law and 14 of these regulations.

ART. 11. If the explorations are to be made on private property, the exploring party should first obtain due permission from the owner of the property or his attorney, who, if authorizing it, will give the explorer a written statement specifying thereon the limits of the ground to be explored. This statement must be presented to the respective agent, who, after making the proper entry in the record, shall return it to the exploring party, expressing the date and hour when presented.

ART. 12. If the owner of the property or his representative should fail to grant the permission called for, the exploring party should apply to the agent for same, stating at the same time his security therefor. This petition shall be presented by the agent to the owner of the property, who, failing to protest within a fortnight, shall be understood to grant his consent. At the expiration of the aforesaid fifteen days the agent shall adopt the proper proceedings,

fixing at the same time the amount of security which must be produced by the exploring party and a term of thirty days for presenting the same. The security once produced, the agent shall give the explorer a written acknowledgment, expressing thereon the limits of the section to be explored.

ART. 13. During a term of three months, not to be prorogued, from the date of the notification, permission, or administrative proceedings referred to in articles 10, 11, and 12 of these regulations the agent shall admit of no other petition for the site of explorations, or the limits thereof, than those proceeding from the exploring party.

ART. 14. The exploring party or parties shall not carry on the work of exploration at any distance from towns or inhabited places nearer than 50 meters from the exterior boundaries of public and private buildings and outhouses belonging thereto. The same distance shall be observed with regard to any public edifice or construction of any kind; but this shall be reduced to 30 meters from the lines bordering on highways, railroads, and canals. With regard to fortified places, no work of exploration shall be carried on within 1 kilometer reckoned from the outer lines of same.

CHAPTER III.—ON CONCESSIONS.

ART. 15. The petitions for concession of claims or extensions must be presented in duplicate to the respective agent. These petitions shall clearly express the number of claims wanted, their situation on the ground, and the relative position of said ground with regard to the corresponding municipality, fixing the most notable points of the locality for identification and specifying, at the same time, the mineral substance to be developed. Should the agent judge the petition as lacking clearness and accuracy on any point, he shall have the right to question the petitioner in order to obtain the same, all such information being affixed to the duplicate petition and the record of the agency in the presence of said petitioner. Ignorance or inability on the part of the petitioner to afford the desired information shall be no obstacle in the way of registering the petition or sufficient cause for suspending the proceedings.

ART. 16. The agent shall admit no other petition for the same site until the department of public works has given its final decision on the provision for each petition.

ART. 17. On presentation of a petition to the agent this functionary shall proceed to register the same in the presence of the petitioner, stating on the margin of both petition and duplicate thereof, as well as in the official register duly authorized by the department, the date, hour, and numerical order of presentation, the duplicate being then returned to the petitioner. The petition must be registered strictly in the order of dates and hour of day presented, leaving no space in blank between the inscriptions.

ART. 18. In the event of two or more petitions for claims or extensions on the same site being presented at the same time, the decision shall be cast by lots.

ART. 19. Within three days following the presentation of a petition for concession of mining claims the agent shall appoint a titled expert or, if such is not to be found, a practical surveyor to take the measurements and draw the plans of the claims and extensions solicited, expressing clearly thereon the monuments marking said claims, as well as those of all other claims within an area of 100 meters all around. The agent may appoint the surveyor suggested by the petitioner, provided said surveyor meet all the requirements prescribed by law.

ART. 20. Within the next eight days following the appointment referred to in the foregoing article the surveyor must communicate with the respective agent, stating whether he accepts the appointment or otherwise. If in the first case, he should also state that arrangements had been concluded between himself and the petitioner as to the amount of fees to be collected. The agent shall thereupon make the proper entry in the respective provision.

At the request of the petitioner, the agent may extend, on one single occasion, the aforesaid period of eight days to another eight.

ART. 21. On making the entry referred to in the foregoing article the agent shall fix a period not exceeding sixty days for the presentation of drawings referred to in article 19 ac-

companied by an explanatory report by the surveyor; the agent shall then proceed to draw up an extract in duplicate containing the following data:

(1) The petition, specifying in a clear and precise manner the name and dwelling of the petitioner and the numerical order of the corresponding title.

(2) The name, residence, and acceptance of the surveyor appointed.

(3) Due notice that, within a period not to exceed four months from the date of said extract, the corresponding title shall be finally substantiated at the respective agency.

A copy of the note shall be published in the bulletins fixed on the exterior of each agency, the petitioner furnishing the revenue stamps necessary for said publication. The notice shall remain on the bulletin boards for a period of one month, due entry thereof being made in the corresponding title.

Another copy of the notice shall be handed the petitioner, who, at his own expense and risk and within forty days after the date of said notice, shall have the same published three consecutive days in the official paper of the respective State, territory, or federal district, copies of which issues must be delivered at the agency by the petitioner, in order to have the same attached to the corresponding title.

ART. 22. The publication of the notice, as stated in the previous article, shall serve as summons to all such as may deem themselves justified in protesting against the concession of the petition in question.

ART. 23. On making the entry referred to in article 20 the agent shall hand the expert a certified copy of his appointment, which must close with warning that whosoever may resist or oppose the execution of any work undertaken by the expert shall make himself liable to the penalties established in article 904 of the penal code of the federal district or the law of the respective State.

ART. 24. Should the experts meet any opposition or positive resistance in the execution of the previous article, they may call the local authorities to their assistance.

ART. 25. The experts shall pay due attention to all remarks offered by the petitioner, as well as by those who have opposed or may oppose the petition; but they shall reserve their views on the subject for the written report referred to in article 21, the presentation of which, within the period therein stipulated, shall be for the sole account and responsibility of said surveyor, as well as all damages that may spring from the nondelivery of said reports and maps.

ART. 26. Opposition to the concession of a petition for any of the following reasons shall only be admitted during the four months stipulated in clause 3 of article 21, viz:

(1) By the dissent of the property-owner.

(2) By the invasion or trespass on adjacent claims or extensions.

(3) By prior rights or petition of the claims of extensions solicited.

ART. 27. On receipt of a protest to any petition the agent shall notify the petitioner, by means of a written notice placed on the bulletin boards during three consecutive days, expressing thereon the names of the claimant and opponent respectively, as well as the numerical order of the corresponding title wherein due entry shall be made of said publication.

ART. 28. Save in the event of the petitioner notifying the agent that he desists from his claim, the latter shall have the opponent's protest preserved on file until the surveyor's report and plans are presented.

ART. 29. On presentation of these documents the agent shall proceed to call a meeting of the parties, to take place within the next fifteen days, publishing said summons on the agency bulletins during three consecutive days and expressing the number of the provision, names of the parties, and date and time of day appointed for the meeting. At this meeting it shall be the agent's mission to bring about a compromise between the dissenting parties, in order to avoid legal complications. Of all these particulars due entry shall be made in the respective provision.

ART. 30. If the opposition should spring from the landowner and the expert's report should point out indications of mineral deposits on the surface or any explorations in said deposits, the agent shall carry the administrative proceedings on the provision to a conclusion,

so that the department may issue the proper title in favor of the petitioner, since this, according to articles 7 and 11 of the law, is either simply accountable for the underground operated upon or otherwise leaves to the jurisdiction of the courts the extension and appraisements of the surface occupied by the miner. At the conclusion of these proceedings, which shall be duly placed on record, the agent shall notify the parties that they are at liberty to have recourse to the usual tribunals, according to article 20 of the law.

ART. 31. In any other of the opposition cases enumerated in article 26, should the agent be unsuccessful in bringing the parties to a compromise, he shall at once suspend all further proceedings and deliver the respective provision to the petitioner, who, on his own responsibility and within a reasonable term appointed by the agency, must present it before the corresponding local judge of first instance.

ART. 32. If any reasonable opposition based on causes not provided for in article 26 should be produced, the agent shall simply affix the same to the corresponding provision, without suspending the proceedings on this account.

ART. 33. In the event of any opposition being made after the delivery of the surveyor's maps and report, but before the expiration of the four months stipulated in clause 3 of article 21, the proceedings referred to in articles 29 to 32 shall be continued without interruption. This is the only instance (aside from the remission to the tribunals) where the agent may delay the substantiation of the provisions for thirty-five days after the said four months, provided the opposition be made within twenty days of the expiration of the above-mentioned four months.

ART. 34. If the four months referred to in article 26 should have transpired without any opposition being made, or in the event referred to in articles 30 and 32, or should the provision be returned by the tribunals with a judgment in favor of the petitioner, the agent is strictly enjoined to forward to the department of public works, within the next fifteen days following and under registered cover, copies of the provision and maps, unless the petitioner should undertake to be the bearer of those documents, in which case the agency shall give due notice thereof to the department.

ART. 35. The petitioner shall furnish the agency with the amount of revenue stamps required for issuing the title. The stamps shall accompany the copies of provision and maps forwarded the department under registered cover and will be returned, through the agent, to the petitioner if the department should disapprove the provision and consequently refuse the title. If the petitioner should so desire it, he may appoint the party who must deliver the stamps at the department.

ART. 36. Any omission or neglect in presenting the petitions, furnishing the stamps or printed notices, payment of fees, or nonappearance at the meetings, and, in general, of any requirement mentioned in this chapter, imputable to the claimaint or the opponent respectively, shall imply, on the part of the former, the relinquishing of all claims and his petition, and, on the latter, that he desists from his opposition, and consequently acknowledges the legality of the petitioner's claims.

ART. 37. After due consideration and approval of the provision by the department, the proper title shall be issued and forwarded to the agent, who must deliver the same to the petitioner, with a copy of the maps duly stamped by the department of public works, this department furnishing that of finance with a detailed report on the concession granted.

Should the provision meet the disapproval of the department, the agent shall be notified thereof, in order that any errors or deficiencies may be rectified within the term appointed by the department, provided said errors or deficiencies are not chargeable to the petitioner or the agent himself, in which case a different course shall be adopted in accordance with article 19 of the law.

CHAPTER IV.—GENERAL LAWS.

ART. 38. The work to be performed on the ground by the expert, according to article 19, must conform with the scientific proceedings, in order to obtain the horizontal longitudes on

the sides of the claims and the angles made by same with the true meridian. To this end the expert must determine the magnetic deviation of the compass if this instrument is used to measure the direction sides. The expert shall mark some of the vortices in the perimeter by means of permanent monuments on the ground, gathering all the necessary information besides, in order to verify said measurements when desired.

The expert shall designate upon the ground the spots where the monuments ought to be constructed, as set forth in article 41.

ART. 39. The maps of the respective claims must be neatly and accurately drawn on strong paper for the better preservation of said documents. The copies thereof may be produced on tracing cloth. The maps must be made in proportion to the object of the maps in decimals, also the length of the sides in meters, the direction of same with regard to the true meridian, and the deviation of the compass at the time of taking the observations, and, lastly, the area of the surface in hectares.

ART. 40. The selection and survey of the claims upon the ground confer no rights to the occupation of same, but shall serve simply to show the limits embraced in the mining concession thus obtained. For the final acquisition of the surface required by the petitioner for the development of his mining concession or that covering the total area of his claims he must either arrange with the owner of the property by means of purchase or otherwise present an action before the corresponding tribunal for the expropriation of said ground, as prescribed by article 11 of the law.

ART. 41. The monuments to be fixed on the ground must meet the following requirements:

(1) Their position must be permanent, as they are intended to mark spots not to be changed as long as the concession for the claims undergoes no modification. Their construction must be solid, and they shall be kept in good repair.

(2) A sufficient number of them shall be erected in the most convenient places, so that from any one monument the preceding as well as the following one may easily be seen. Care should be taken to distinguish the same in shape, color, or any other characteristic mark from those of adjacent claims.

ART. 42. The concessionaires of mining claims shall not overstep the limits marked in their respective concessions (as prescribed by article 8 of the law), except in the event of waste lands existing near their property, due petition for the extension thereof being previously presented to the respective agent, who shall proceed in this case exactly in the same manner as prescribed in these regulations for the concession of mining claims. The like process shall be adopted in the substantiation of petitions for the ratification of claims.

ART. 43. The possession of a legal concession is indispensable for the operation or development of all mineral substances enumerated in article 3 of the law. Therefore, no manner of work tending to the development of mines or deposits of said substances, whether on the surface or underground, shall be allowed without the same being protected by means of a legal title thereto duly registered.

ART. 44. All petitions of concession for the development of any substance not enumerated in article 3 of the law shall be rejected, the development of said substance according to article 4 of the same law being the exclusive right of the landholder.

ART. 45. In compliance with clause 4 of article 12 of the law, a petition for the corresponding license accompanied by a horizontal projection and profile of the adit, reduced to a proportional decimal scale, and all other particulars that may be deemed pertinent thereto, shall be presented to the respective agent. Said agent shall forward to the department the corresponding petition and maps, together with his report on the subject.

The department, on receipt of these documents and all further information that may be deemed necessary, shall proceed to render its decision.

ART. 46. The owner of mining claims who should be refused the consent of the party that ought to render the legal service shall present to the department (in compliance with

clause 19 of article 12 of the law) the corresponding protest in the form of a petition embracing all the necessary information on the subject.

The department, in conformity with the agent's report thereon and previous hearing granted the dissenting party or his attorney, shall render its decision within the period previously established for that purpose.

ART. 47. If the petitioner or the party who ought to render the service referred to in clause 19 of article 12 of the law should deem the department's judgment unfavorable to his legal rights and interests, he shall be at liberty to appeal from this decision to that of the respective judge, provided said appeal be made within two months from the date of the administrative decision.

ART. 48. In places within the Republic not embraced in the jurisdiction of a mining agent the petition for concessions, as well as the notices and concessions themselves, shall be presented to the postmaster of the locality, who shall file said documents, expressing thereon the date and time of day presented, and shall notify the department of public works through the mail and by wire where such means are obtainable.

ART. 49. The postmaster shall receive and file the petitions for concessions or the concessions themselves only in such cases where his residence lies beyond the jurisdiction of any mining agent.

ART. 50. The department of public works shall publish in the Diario Oficial, the federal official paper, every six months, the number of titles issued during that period.

ART. 51. The special book referred to in article 25 of the law shall be kept by such parties as are designated in article 18 of the commercial code, in the manner prescribed for in said code, chapter I, title II, book I.

ART. 52. It is the right of every individual to inscribe his titles for future concessions or actual property in the commercial registers, as sanctioned by article 36 of the commercial code, in such cases where the proper register is not kept.

ART. 53. It is compulsory for all mining corporations, as well as for the creditors thereof, to register all their transactions, as stipulated in articles 25 of the law and 5 of the by-laws.

ART. 54. All mining corporations are obliged to register the location of their mining claims, as well as the residence or residences of the company, at the department or judicial district.

ART. 55. If, through the extension of claims or other causes, any doubts should arise regarding the place where the registering should be effected, in accordance with the previous article, the department of public works shall render its decision thereon, communicating the same to that of finance.

CHAPTER V.—BY-LAWS.

ART. 1. The agents shall receive in the strictest numerical order, as per inventory thereof, all the provisions found in the present mining deputations or offices in place of same, on taking possession of them, and all provisions pending resolution shall be given due course, as prescribed in article 1, title V, of the law.

ART. 2. All claims in the course of publication shall be placed on the bulletin boards after the agent has duly complied with the prescription expressed in article 21, said notice being again published in the official paper referred to in the last-mentioned article.

ART. 3. When the provisions of denouncement have been duly advertised, though the appointment of the expert should be still pending, the agent shall proceed exactly as in the case of a new petition for concession, without making a new entry in the register.

ART. 4. With regard to provisions where the surveyor has been appointed but has not as yet presented the maps and report, the agent shall proceed in like manner as in the case of new petitions, without making a new entry in the register.

ART. 5. With regard to provisions where the maps and report have been duly presented, the agent shall proceed to draw a note in duplicate containing the following:

(1) Copy of the petition, clearly expressing thereon name and residence of the petitioner and numerical order of the corresponding document.

(2) The expert's report.

(3) Notice that a term not to exceed two months from the date of said note will be allowed for the substantiation of the corresponding provision at the agency.

ART. 6. In the event of provisions on denouncement, where any opposition should have occurred before delivery of the maps and report, the agent shall proceed in accordance with article 27 and, if required, as prescribed in articles 28 to 32.

ART. 7. With regard to provisions where any opposition may have been produced, the expert's maps and report being delivered, or where the opposition takes place within the two months stipulated in article 5 of these by-laws, the proceedings shall be analogous to those in articles 28 to 32, the agencies having the right to the thirty-five days' extension granted in article 33.

ART. 8. The same proceedings (as in articles 27 to 32) shall be adopted with regard to provisions undergoing the twenty days' probation expressed in article 78 of the mining code of November 22, 1884. The agents, in their administrative capacity, can not render their decision in the same manner and spirit as the corresponding tribunal.

ART. 9. At the expiration of the two months referred to in article 5 of these by-laws, or in any event provided for in article 34, the agents shall proceed in conformity with the prescriptions of said article.

ART. 10. For this one occasion the three days stipulated in article 19 shall begin to count from the date that the agent shall announce that the office and business pertaining thereto are open to the public.

Therefore, let this be printed, published, and circulated for the fulfillment thereof.

Given at the palace of the executive power of the Union, Mexico, June 25, 1892.

PORFIRIO DIAZ.

TARIFF FOR THE PAYMENT OF FEES TO THE MINING AGENTS.

[Inclosure 4 in Minister Ryan's report.]

(1) For the inscriptions in the notice or in the concession of explorations referred to in articles 10 and 11 of the "regulations or legal proceedings regarding mining" and the corresponding entry in the records, $1.

(2) For the proceedings on each concession of exploration referred to in article 12 of said regulations and entry thereof, $2.

(3) For registering each petition of mining concession, or extension thereof, or rectification of same, and entry in the records, $1.

(4) For the publications, memorials, and notes on provisions, at the rate of 20 cents for each ten lines or fraction thereof, besides 10 cents for the title-page covering the documents to be copied.

(5) For the transcription, checking, and legalization of testimonies, certificates, and other copies, at the rate of $1 for each one hundred lines or fraction thereof. For the search of a provision or any other document from the archives, $1. When the solicitor can not furnish sufficient data on the subject and documents of over a year's date must be searched, $1 for every year thus revised.

(6) For every kilometer traversed in any direction for the prosecution of any transaction in connection with his office, 25 cents.

(7) For examinations of any kind, whether on the interior or exterior, $5.

(8) For inspections, visits, or examinations of underground works, $5 for every 100 meters in depth or fraction thereof and $5 for the corresponding report.

(9) For his appearance at meetings not exceeding an hour in duration $3, and $1 more for every hour extra or fraction thereof.

FERNÁNDEZ LEAL.

MEXICO, *June 25, 1892.*

COMMERCE AND INDUSTRIES OF BELGIUM.

REPORT BY CONSUL LINCOLN, OF ANTWERP.

From the annual report for the year 1891 just published by the board of trade of this city I am enabled to make the following report concerning the industries and commerce of Belgium:

FOREIGN COMMERCE.

The official statistics of the commercial movement of Belgium with foreign countries shows an increase in imports of 9 per cent and an increase in exports of 6 per cent over 1890. The total imports were 1,547,000,000 francs and the total exports 1,312,000,000 francs.

Among the most important increases in imports must be noted that of wheat and great barley, the importations of these products amounting to 106,000,000 francs. This increase is due to the excessively bad crops which have prevailed throughout central Europe.

There has been a large increase in the exportation of arms, locomotives, engines, and carriages for steam railways and tramways.

The maritime movement shows the entry of 7,403 ships whose total tonnage was 6,126,920 tons, against 7,395 ships in 1890 whose total tonnage was 5,774,672 tons. The departures were 7,393 ships whose total tonnage was 6,044,985 tons, against 7,382 ships in 1890 whose total tonnage was 5,800,732 tons.

AGRICULTURE.

The agricultural report is most unsatisfactory. The country has suffered seriously through the bad crops. Wheat, rye, barley, and great barley fell far below the average crop per hectare, while oats only yielded an average crop.

INDUSTRIES.

Breweries.—In 1891 the total number of breweries in operation in Belgium was 2,832, an increase of 46 over the preceding year. The total consumption of beer in this country was estimated at over 1,000,000,000 liters. The importation of German and English beers has decreased from 61,371 hectoliters in 1889 and 55,286 hectoliters in 1890 to 52,973 hectoliters in 1891, thus showing that the art of brewing foreign beers has largely developed in this country. The native beers are slowly losing ground in public favor and giving way to German-brewed beers, although some of the native beers are very good and very cheap. The exportations were insignificant, amounting to about 6,000 or 7,000 hectoliters only. In the province of Antwerp 283 breweries were in operation, 2 more than in the preceding year. The internal-revenue tax on beer yielded 14,905,554.71 francs, or 130,078.34 francs less than in 1890, showing that, although more breweries were in operation, less beer was brewed.

Bricks.—At Niel, on the Rupel, 700 men are employed in the brick-yards, and the annual production is estimated at 40,000,000 bricks, 10,000,000 roof tiles, and 4,000,000 floor tiles. These are exported to nearly all parts of the world. The wages paid to the workmen vary from 1.50 to 2 francs per diem.

Coal.—The production of coal in this country was 19,865,345 tons, against 20,365,960 tons in 1890.

Diamonds.—During the year 1891 the diamond trade was extremely quiet, and all hope for a renewal of business activity was unrealized. With the exception of some orders from the United States executed by a few firms who enjoy peculiar facilities, business was extremely difficult—so much so that most of the diamond-cutting establishments remained inactive during the greater part of the year. Work being so little in demand, many cutters have abandoned their trade, while some have started business on their own account, thus increasing the competition. This has caused a fall in the price of cut diamonds. The rough diamond, with the exception of slight fluctuations, has remained at about the same price. On the whole, the outlook for the diamond industry and commerce is dark, and more especially so as business in general remains quiet. The amount of exportations to the United States in 1891 was $511,054, against $403,862 in 1890, an increase of $107,191.

Distilleries.—There were 264 distilleries in operation during the year 1891, the province of Antwerp participating to the extent of more than one-fourth in the quantity of liquor produced with 11 distilleries engaged. In 1891 the exportation of liquors amounted to 9,998 hectoliters, against 16,866 in 1890 and 20,778 in 1889, showing a steady diminution, which is looked upon as a regrettable loss to the industrial, commercial, and maritime interests of the country. On the other hand, the importation of liquors has very considerably increased, the treasury having realized in duties 1,565,733 francs, against 1,468,657 francs in 1890. The largest increase in importations has been from France. The internal revenue on domestic liquors yielded to the treasury 37,315,778 francs.

Rice-starch factories.—Although the sale of rice starch has been very regular, the prices have been unremunerative. Broken rice, the raw material essential to the manufacture of rice starch, was relatively dear, and, by reason of the sharp competition in the manufactured article, the price of starch could not keep up with the advance in price of the raw material. The duty in France on starch having been raised from 14 francs to 18 francs per 100 kilograms, makes business with that country impossible; and the Belgian manufacturers, in order not to lose their French customers, will be obliged to establish factories in France.

Rice mills.—This industry is suffering from foreign competition, since pealed rice is allowed to enter free of duty, while the same product from the Belgian mills is taxed in Germany and the duty in France is actually prohibitive. Until within a few years raw rice, or rice only partially husked, was

exported to Europe and was husked, pealed, and glazed in the European rice mills, from whence markets were found throughout Europe and in countries not producing rice. Of late years, however, this has totally changed, much to the detriment of the European rice mills. The exporters at Rangoon, having changed their factories, produce "white rice," called "Straits quality," which they sell by entire cargoes to the different ports of South America, the Levant, and elsewhere. The exporter is therefore much more independent, and thus realizes a higher price for the raw article. This is most unfavorable, and it is feared that this competition will crush the activity and interests of European rice mills.

Shipbuilding.—The Société Cockerill constructed in 1892 the following vessels: Two steamboats for the Kongo, 2 pontoons for Russia, 1 tugboat for Brazil, 1 tugboat for the Société Cockerill, 1 tugboat for Algeria, 1 transport of 100 tons for the Kongo, 1 lighter for Brazil, 1 lighter for the Société des Produits du Congo, 1 canal tugboat for the Willebroeck Canal, 1 tugboat for breaking ice for the city of Antwerp, and 1 steamboat for the Katango Company (Kongo). The average number of workmen employed was 319. The wages paid varied from 15 cents for apprentices to $1.70 for men per diem.

Sugar-refining.—The total number of refineries in activity in 1891 was 100, against 118 in 1890. The exportation of sugar to the United States from Antwerp amounted to $2,240,948, an increase over 1890 of $1,596,226. The McKinley bill, in admitting free all sugar under No. 16 Dutch standard in color, has increased the consumption of sugar by 363,000 tons. Europe exported to the United States 331,000 tons.

Sulphur-refining.—One refinery only exists in this district, and in 1891 it imported 5,998 tons of crude sulphur from Sicily. The refined product is obtained by the sublimation of the crude Sicilian sulphur, and the brand manufactured by this establishment is preferred in the foreign markets. Nearly all the refined sulphur is exported.

Wool-combing.—In the wool-combing establishment at Hoboken business in 1891 was most difficult, a state of affairs brought about by the fact that the supply of the raw material was far greater than the demand for the product. The factory employed 700 men and women, to whom were paid wages amounting to 560,000 francs.

Cement and paper.—The manufacture of Portland cement and paper forms two of the most important industries of this province, but up to the present moment no report has come to hand concerning them.

The Société Niel-on-Rupel and North's Portland Cement Works, at Beerse, both of this consular district, are continually shipping Portland cement to the United States. The shipments of Portland cement to the United States in 1891 amounted to $243,792.46. Over 345 tons of paper were exported from Antwerp to the United States, and the total exportation from this port of paper amounted to 17,182 tons. It is to be regretted that for the moment no fuller report of these two important industries can be obtained.

Railroads.—The following table shows the development of the railroad system from 1835 to the end of 1891:

Year.	State.	Private.	Total.
	Kilometers.	*Kilometers.*	*Kilometers.*
1838	20	.....	20
1840	334	32	366
1850	625	273	898
1860	749	981	1,730
1870	869	2,028	2,897
1880	2,662	1,341	4,003
1890	3,209	1,261	4,470
1891	3,250	1,276	4,526

NAVIGATION.

The national merchant service of Belgium on the 31st of December, 1891, comprised 55 ships, of which 9 were sailing vessels and 46 steamers. The total tonnage was 78,799 tons.

GEORGE F. LINCOLN,
Consul.

UNITED STATES CONSULATE,
Antwerp, August 20, 1892.

BUTTER AND BUTTERINE IN JAPAN.

REPORT BY CONSUL SMITHERS, OF OSAKA AND HIOGO.

The total amount of butter imported into Hiogo during the year amounted to 19,352 pounds, valued at 5,531 silver yen,* and comes mainly from the United States and France. The total amount imported into the whole country amounted to 173,253 pounds, valued at 53,109 silver yen, of which 66,659 pounds were imported from the United States and 45,829 pounds from France. I fancy a quantity of that imported at Yokohama eventually finds its way down here.

In addition to this a large quantity of fresh butter is manufactured here for table use, and is preferred to that in tins, which, in turn, is used almost entirely for cooking purposes. Of the latter the style of package used is the ordinary tin can, ranging from 1 to 5 pounds, and the ruling quotation, as obtained from Messrs. Langfeldt & Co., of this port, is from 50 to 65 sen† per pound.

E. J. SMITHERS,
Consul.

UNITED STATES CONSULATE,
Osaka and Hiogo, August 6, 1892.

*1 yen=69.9 cents. †100 sen=1 yen.

COMMERCE OF ANTWERP.

REPORT BY CONSUL LINCOLN.

IMPORTS.

Coffee.—In 1891 there were imported into Antwerp 31,107,709 kilograms of coffee, or 591,783 bales and 435 casks, 17,422 bales of which were imported from the United States. This amount shows a decrease from the importations of 1890 of 177,848 bales and 255 casks.

Cocoa.—The total importation of cocoa was 18,779 bales, an increase over 1891 of 2,144 bales. Six hundred and eighty-five bales were imported from New York, showing a falling off since 1880 of 921 bales, viz: In 1880 there were imported from New York 1,706 bales; in 1890, 1,635 bales; and in 1891, only 685 bales. The largest importation of cocoa was from France, viz, 5,990 bales.

Cereals.—In 1891 cereals were imported as follows: Wheat, 18,034,491 hectoliters; rye, 1,341,089 hectoliters; barley, 2,052,570 hectoliters; oats, 1,486,819 hectoliters; maize, 2,539,402 hectoliters; total, 25,454,371 hectoliters. This is an increase of 4,500,000 hectoliters over 1890, and would have been still greater had not the exportation of cereals from Russia been prohibited.

Flour.—Of flour 506,908 sacks were imported in 1891, against 373,590 sacks in 1890. There were 234,585 sacks imported from the United States, showing an increase over 1890 of 122,779 sacks.

Cotton.—The season of 1891 has not been of great importance, as many large houses have preferred to operate in foreign markets instead of at home. The price of American cotton fell 20 per cent and that of Indian cotton 10 per cent, making American middling cotton valued at 51 francs per 50 kilograms at Antwerp, and Oomra and Dhollerah at 43½ francs per 50 kilograms. There were 340,319 bales imported into Antwerp in 1891, or 65,042 less than in 1890, or 50,000 bales less than in 1889. Of these 340,319 bales, 84,281 came from the United States, 213,154 from India, and the balance from sundry European ports. The result of official comparisons made between American and Indian cottons in the Madras Presidency is that the cultivation has greatly increased and that the fields are much more carefully looked after there than heretofore.

Hemp.—The total importation of hemp in 1891 was 31,578 bales, 1,981 of which were imported from New York and Boston. A steady increase is shown in the importation of this article from the United States, viz: In 1870, none; 1880, 25 bales; 1889, 154 bales; 1890, 1,912 bales; 1891, 1,981 bales.

Honey.—The importation of honey from the United States shows a steady increase since 1875, viz: In 1875, 54 tierces; 1880, 882 tierces; 1890, 1,739 tierces; 1891, 1,924 tierces. The total importation in 1891 was

4,544 tierces, against 4,006 tierces for the preceding year. The largest importation was from New York and the next largest from France (798 tierces). Germany follows with 736 tierces, England with 411 tierces, and Holland with 250 tierces. The total quantity was 1,111,028 kilograms, 561,597 kilograms of which were reëxported.

Horns.—The table of importations shows 2,214,000 horns for 1891, against 1,399,000 in 1890, nearly all of which were from South America. Those that obtained the highest price were the Rio Grande, ranging from 35 to 45 francs for 50 to 60 kilograms.

Hides.—The year 1891 has been a most unfavorable one for the importation of hides, the prices having diminished steadily. It is supposed that this is brought about by the bad state of affairs in the tanning industries in Europe, which has continued now for some years. The result has been that in Antwerp, Havre, and Liverpool there was a total stock of 725,000 hides in October, against only 300,000 in December, 1890. The total importation at Antwerp was: Salted hides, 1,310,222; dry hides, 127,523; total, 1,437,745 hides, not including calf or buffalo hides. This is an increase over 1890 of 63,924 hides. In 1891 there were 152,457 hides reëxported, against 341,128 in 1890, being a diminution of 188,671. Hence the increase in stock at Antwerp at the end of the year was 250,727 hides, against 176,076 at the same date in 1890. The amount of exportation of hides to the United States in 1891 was $199,106.95, against $137,032.08 in 1890, an increase of $62,074.81.

Lard.—Business in lard was very difficult during the entire year of 1891. The high price of maize during the beginning of the year is said to be the cause, as on that account the American farmers were obliged to force their pork into the market. There were heavy fluctuations throughout the year, so that whatever profits were made in the early part of the year were lost again towards the close. The quantity imported was 252,868 cases in 1891, against 305,323 in 1890. With the exception of 50 cases, the entire importation was from the United States.

Petroleum.—"From bad to worse" is the state of affairs reported by the chamber of commerce regarding petroleum. The sailing ships have given way entirely to the tank steamer, and it is since this radical change that the business, almost in its entirety, has gone over into the hands of powerful monopolies. There were imported 536,354 tin cases from the United States, showing a decrease since 1889, for in 1889 there were imported 855,273 tin cases and 718,497 in 1890.

Rice.—The total importations of rice in 1891 were 738,356 bales, against 721,465 in 1890, an increase of 16,891 bales. The largest importation was 296,202 bales from Akyab. There is a marked difference between the importation of 1891 and of 1888, when 1,031,165 bales were imported. Over 15,500,000 kilograms were reëxported, of which 97,000 went to the United States.

Resin.—The total importation was 50,882 barrels, of which 48,491 barrels came from the United States. This is a very slight increase over 1890.

Salt provisions.—The total importation was 88,684 cases and 1,291 barrels. Of the total 83,936 cases and barrels were from the United States.

Oleaginous seeds.—There were 217,055 hectoliters of linseed imported from the United States in 1891, this being next to the largest importation. The largest was 696,239 hectoliters from the East Indies. The total importation was 1,340,193 hectoliters. The trade in the other seeds of a like kind was far less important.

Turpentine.—There were imported from the United States 20,127 barrels, out of a total importation of 20,214 barrels.

Tobacco.—During the year 1891 the following American tobaccos were imported: Kentucky, 10,419 hogsheads; Virginia, 871 hogsheads; Mason County, 1,090 hogsheads; Maryland and Ohio, 126 hogsheads; total, 12,506 hogsheads. The total importation was 13,236 hogsheads and 26,862 cases. Business has been fairly animated throughout the year.

Building lumber.—From Florida there were imported 22,512 cubic meters of lumber, all pitch pine; from the other States and Canada, 1,893 cubic meters. The total importation was 346,765 cubic meters.

Cabinet woods.—The importation of wood for furniture and decorative purposes was unimportant so far as the United States are concerned—1,990 blocks of walnut, 117 blocks of American poplar, and 112 blocks of hickory. The total importation was 1,582,579 kilograms, 705,147 kilograms of which were reëxported.

EXPORTS.

Among the most important exports from this district is that of extract of meat. The general depot of the Liebig Extract of Meat Company (limited) and also the European agency for the "Kemmerich" extract of meat are both at Antwerp. The value of the shipments of this product from Antwerp to the United States in 1891 was $113,720.88.

Large quantities of bed feathers and rags are shipped from this port to the United States annually, and phosphates, horsehair, human hair, flax, chicory, drugs, religious books (Roman Catholic), gin, and lead are among the regular shipments to the United States.

EMIGRATION.

The total emigration from the port of Antwerp was 48,788, or 12,135 more than in 1890. Of this number 36,108 were bound for New York, 7,152 for Philadelphia, and 139 for New Orleans. The total emigration to the United States amounted to 43,399 souls.

NAVIGATION.

The national merchant service of the port of Antwerp comprised 46 ships, of which 41 were steamers and 5 sailing vessels. The total tonnage was 68,856 tons, against 74,675 tons in 1890, the decrease being caused by the sale of 5 steamers and 2 sailing vessels.

The total tonnage arriving at the port of Antwerp for the year 1891 was 4,760,417 tons. This is greater than either Bordeaux, Bremen, Havre, or Marseilles. Hamburg figures next with a tonnage of 5,762,369 tons.

GEO. F. LINCOLN,
Consul.

UNITED STATES CONSULATE,
Antwerp, August 20, 1892.

IMPORTS AND EXPORTS OF SPAIN.

REPORT BY CONSUL TURNER, OF CADIZ.

Table showing the value of imports into and exports from Spain for the first six months of 1890.

IMPORTS.

Classes.	1890.	1891.	1892.
	Pesetas.	*Pesetas.*	*Pesetas.*
Class 1 (minerals, glassware, stones, etc.)	37,938,574	43,148,040	39,214,629
Class 2 (metals and manufactures)	21,159,698	17,172,307	15,947,861
Class 3 (drugs, medicines, etc.)	27,781,871	28,942,321	25,772,748
Class 4 (cotton and manufactures)	47,906,447	65,382,505	61,728,824
Class 5 (vegetable fibers and manufactures)	16,375,206	16,656,695	17,396,735
Class 6 (wool and manufactures)	14,771,238	16,003,000	20,260,813
Class 7 (silk and manufactures)	9,186,055	8,578,772	9,503,091
Class 8 (paper and manufactures)	4,798,625	4,907,423	5,234,905
Class 9 (wood and manufactures)	23,419,515	21,753,740	23,139,407
Class 10 (animals and their products)	21,275,731	25,077,556	20,229,668
Class 11 (machinery, vessels, etc.)	27,234,391	24,110,573	20,480,223
Class 12 (cereals and breadstuffs)	107,153,602	95,815,016	82,536,196
Class 13 (sundries)	3,340,498	3,566,377	3,102,789
Special imports	39,162,328	35,545,558	56,515,907
Total	401,503,779	406,659,883	410,063,796

EXPORTS.

Class 1 (minerals, glassware, stone, etc.)	51,616,159	41,293,727	42,621,900
Class 2 (metals and manufactures)	64,748,433	56,465,113	84,631,793
Class 3 (drugs, medicines, etc.)	13,200,318	13,606,090	14,367,128
Class 4 (cotton and manufactures)	10,385,241	9,355,585	17,093,795
Class 5 (vegetable fibers and manufactures)	1,097,157	1,731,663	2,617,333
Class 6 (wool and manufactures)	6,557,254	4,272,784	5,636,087
Class 7 (silk and manufactures)	1,895,609	1,596,134	3,103,729
Class 8 (paper and manufactures)	5,419,719	4,176,265	5,966,950
Class 9 (wood and manufactures)	16,388,798	18,293,730	17,954,620
Class 10 (animals and their products)	22,984,501	23,283,048	19,810,371
Class 11 (machinery, vessels, etc.)	345,815	591,833	246,113
Class 12 (cereals and breadstuffs)	189,807,231	198,781,277	165,631,847
Class 13 (sundries)	1,888,717	1,036,751	1,625,247
Total	385,734,952	374,484,000	381,306,913

R. W. TURNER,
Consul.

UNITED STATES CONSULATE,
Cadiz, August 25, 1892.

AMSTERDAM-RHINE CANAL.

REPORT BY CONSUL SCHLEIER, OF AMSTERDAM.

In my annual report on the trade and navigation of Amsterdam for the year 1891 I briefly mentioned the hopes of the early completion of the Merwede Canal, which gives a more direct, wider, and deeper water way from this city to the Rhine than before; and, being of so great importance to the commercial interest of this city, its completion and formal opening deserves more than a passing notice. I therefore submit herewith a very brief sketch of the struggle this great seaport had to contend with to finally gain this link in the communication between Amsterdam and the Rhenish provinces of Germany.

The opening of this so-called Merwede Canal took place on the 4th of August, 1892, and was attended with considerable ceremony, the Queen Regent and her daughter, the young Queen Wilhelmina, being present and declaring the canal formally opened.

The water communication between this city and the Rhine was, up to the present, of an entirely insufficient character. The so-called "Cologne water way," forming that part of the connection between Amsterdam and Utrecht, is narrow, very crooked, shallow, and impeded by no less than seven locks in the short distance between the two cities, as well as by numerous railway and other bridges.

The little River Vecht, forming a part of the water way, is subject to considerable variation of depth, and in summer and autumn the locks at Utrecht often did not admit vessels drawing more than about 5 feet.

The canal communication between Vreeswyk, on the River Leck, and Gorinchem, on the Waal, was also quite unadapted to the present necessities of river transport. Moreover, the whole of this water way from Amsterdam to Gorinchem was more or less under private control and subject to heavy bridge money and tolls, so that it is hardly necessary to point out that water communication between Amsterdam and the Rhine was up to now in every respect greatly retarded in comparison with the free water highway between Rotterdam, Dordrecht, and Germany.

It has cost the city of Amsterdam more than twenty years of struggle against all kinds of difficulties and opposing influences as well to get rid of this state of affairs; and even now the citizens, though pleased with the great improvement brought about by the new canal, look back with feelings of disappointment and bitterness to the impediments which, as they believe, were placed in their way by the local patriotism of sister cities and by alleged considerations of national defense, through which the plans cherished by Amsterdam were nullified and a route imposed on the new canal which disappointed most of those who had worked their hardest to obtain it.

Amsterdam pressed for a short, cheap, and direct route to the upper Waal by means of a canal along the River Eem to Amersfoort, thence through

the so-called Gelderland valley to the Grebbe, below Arnhem, and then further through the Betuwe to Doodewaard, on the Waal. The advantages promised by this route were: First, the equalization of the distance with that from Rotterdam; second, the avoidance of the shallows in the lower part of the Waal and the Leck; third, cheap construction through a large tract of uncultivated land which could only be greatly benefited by the construction of the canal.

There was great opposition, however, in the States General on various grounds, in which local influences probably played a considerable part, and then the military engineers of the country also reported in favor of a route which should run into the Leck and Waal below, instead of above, Utrecht.

Finally, the present route was adopted, after a hard fight, against the wishes of the city chiefly concerned.

The original plan contemplated using the River Vecht as part of the water way, but fortunately this idea was abandoned during the construction of the canal, and a new, nearly straight, cut from Amsterdam to Utrecht and Vreeswyk, on the Leck, was decided upon and carried out.

The canal, as now completed and opened as far as Vreeswyk, is of greatly improved direction and dimensions. It has a width at the bottom of 20 meters and a minimum depth of 3.1 meters near the locks; and in other places where any accumulation of vessels is to be expected the width is considerably more, reaching to 40 meters. The locks are 120 meters long, 12 meters wide in the gates, and 25 meters wide in the lock itself.

The railway bridges, with one exception, are fixed bridges with a minimum height of 6.5 meters from the water line to the under part of the bridge, as all canal vessels can lower their masts, derricks, and smokestacks.

The length of the canal, from the commercial wharf at Amsterdam to Vreeswyk, on the Leck, is 48½ kilometers (over 30 miles) and the total distance to Gorinchem 71.3 kilometers (over 44 miles).

Between Amsterdam and Vreeswyk there are three locks: one at the entrance of the canal at Zeeburg, on the Zuyder Zee, east of the city; the second at Utrecht, where the canal enters the so-called "Vaartsche Rhine;" and the third at Vreeswyk, communicating with the River Leck. After crossing the river a lock is passed at Vianen, another just above Gorinchem, and finally the lock communicating with the River Waal. There are therefore in all six locks between Amsterdam and Gorinchem, but, for reasons to which I allude below, the first portion of the canal, *i. e.*, that which has just been opened, is practically of the most importance, and will no doubt eventually become the great water way from Amsterdam to the Rhine.

The River Leck can not at present be compared with the Waal as regards navigating purposes, principally on account of its shallowness above Vreeswyk; but of late years the conviction has gained ground that this obstacle is easier to overcome than formerly supposed, and that the bed of the Leck can at a comparatively moderate cost be so far deepened as to endure an average depth of at least 2 meters at the lowest stage of the river. In this

case Amsterdam would practically be put on an equal footing with Rotterdam as regards distance from Cologne, and, as the new canal is free of tolls, the obstacles which previously existed to the transit water traffic would be nearly removed.

How great these obstacles were may be seen from the following figures: Time required to pass through the new canal from Amsterdam to Vreeswyk, 7 hours; time required on the old route, 16 to 18 hours; length of vessels available on new canal, 80 meters; length of vessels available on old route, 50 meters; available draft on new canal, 2.6 meters; available draft on old route, 1.5 meters; width of the new canal at bottom, 20 meters; width of the old route at bottom, 13 meters. And last but not least the tolls. On the old route a small vessel of 200 tons paid 35 florins on the trip back and forward, and a vessel of twice that size paid 50 florins, whether laden or in ballast. The new route is entirely free.

However great the disappointment of the city of Amsterdam at not getting what she considered to be her due, and however just her complaint, it can not be denied that the present improvement is a very great one; and there is but little doubt that every advantage will be taken of it, and that Amsterdam will gradually attain that position in the transit trade which her situation justifies, and from which she has nearly been shut out as far as inland water traffic is concerned. Already many enterprises connected with the new canal are spoken of, and doubtless many will be carried out, to the great benefit of the city and especially of its working population.

It is, of course, a drawback, as compared with the river navigation from Rotterdam, that the canal will in the winter months be sooner closed by ice than the river; on the other hand, the navigation on the canal itself is the safer and the more regular.

The cost of water transportation has of late years rapidly decreased on the Rhine, in consequence of improved conditions of the river and the construction of vessels of much larger carrying capacity than formerly. In this respect the new canal is an immense improvement on the old one, since it will allow the use of vessels fully four times as large as those which could safely pass the older route, which I need hardly say is now completely abandoned.

T. M. SCHLEIER,
Consul.

UNITED STATES CONSULATE,
Amsterdam, August 20, 1892.

THE RHINE VINTAGE.

REPORT BY COMMERCIAL AGENT SMITH, OF MAYENCE.

With reference to the forthcoming vintage on the Rhine this year, I have to report that in the matter of quality it will be excellent, but very disappointing in quantity. The wines realized, it is expected, will compare

favorably in quality with those of the very best years, such as those of 1865 and 1868, for instance; but in quantity there will probably be but one-fifth only of a full vintage. This poor showing as to quantity is very vexing to the wine-growers of the Rhine, who for many years have been patiently waiting for a vintage No. 1 in quality; and now, when at last such a wine is again in view, its value is marred by the scantiness of the quantity produced.

On the Moselle there is a better outlook for quantity than on the Rhine, I am told.

The vintage will take place at the end of October or beginning of November; but the quality of the grapes is already largely fixed, and it is a question now mainly of quantity, which will be very small under any circumstances.

JAMES H. SMITH,
Commercial Agent.

UNITED STATES COMMERCIAL AGENCY.
Mayence, September 21, 1892.

GERMAN DUTIES ON AMERICAN PORK.

TRANSMITTED BY CONSUL-GENERAL EDWARDS, OF BERLIN.

[Translation.—From the Hanover Courier of July 26, 1892.]

Concerning the striking variations in the collection of duty on American bacon the Königsberg Board of Trade, in its annual report, complains as follows:

"Participation in the importation of American pork is, unfortunately, greatly hindered for us, as also for the other German customs ports, as compared with the German free ports, by existing customs regulations. For the thick coating of salt, with which American pork is covered in the United States before being packed and shipped for the purpose of better protecting the meat against the damaging influences of sea transport, in the net appraisement of duty at the German customs ports the tax is estimated at the high tariff rates fixed for pork, while competing importers in the German free ports simply remove the salt before the pork crosses the frontier, and therefore pay the duty on the pork alone net. The taxation of this salt, however, increases the pork duty of 20 marks from 1 to 1½ marks. Our appeal to the minister of finance requesting him to obtain a decision of the federal council that, in connection with American pork, the salt found in the cases may, at the request of the importer, be destroyed under official supervision and then not taken into account in estimating the duties has unfortunately received an adverse answer, because the mode of procedure of customs officials in customs ports is fixed by the provision of section 29, paragraph 5, of the union customs law of July 1, 1869."

The mode of procedure of the customs department here brings to mind somewhat the bygone age of customs curiosities. Pure salt, suitable for human consumption, when imported by sea pays 12 marks per double centner; the impure salt used only for packing, which is unfit for human consumption, must in the ports of the customs territory pay duty as pork at the rate of 20 marks per double centner. If the individual state customs officials can not remove this difficulty, relief must very soon be given through change or completion of the regulations issued by the federal council in regard to tare.

CUSTOMS RECEIPTS OF SPAIN.

REPORT BY CONSUL TURNER, OF CADIZ.

Table showing receipts of the custom-houses of Spain from all sources for the fiscal years 1889–'90, 1890–'91, 1891–'92.

Sources.	1889–'90.	1890–'91.	1891–'92.
	Pesetas.	*Pesetas.*	*Pesetas.*
Duties from importation	90,011,655	92,416,807	92,852,590
Duties from exportation	4,883	680	136,205
Imposts of loading	4,460,418	4,618,324	4,610,398
Imposts of unloading	3,473,290	3,672,419	3,325,099
Imposts of passengers	298,168	210,652	208,930
Minor duties	702,913	688,654	651,993
Quarantine duties	39,962	110,104	51,715
Fines and abandoned merchandise	648,035	623,934	551,968
Imposts upon commercial paper	5,648	11,414	15,976
Imposts upon colonial products	23,361,110	21,758,083	18,073,966
Extraordinary duties upon importation of alcohols	2,513,033	2,481,557	1,689,428
Duties of materials for public works	2,274,856	4,865,753	8,719,245
Any other sources	9,876	2,047	6,534
Total	127,803,847	131,460,428	130,894,047
Amount calculated in the budget	135,545,000	130,395,000	130,395,000
Excess		1,065,428	499,047
Deficit	7,741,153		

Table showing duties of all kinds collected on the articles named for the fiscal years 1889–'90, 1890–'91, 1891–'92.

Articles.	1889–'90.	1890–'91.	1891–'92.
	Pesetas.	*Pesetas.*	*Pesetas.*
Brandy	11,811,500	10,627,032	6,772,292
Sugar	12,002,308	11,072,507	10,819,881
Codfish	8,543,419	8,441,215	8,147,174
Cocoa	5,285,499	4,420,684	4,443,213
Coffee	3,004,892	3,417,093	3,009,166
Wheat flour	2,407,702	1,337,022	98,722
Petroleum	11,599,596	13,241,918	12,765,460
Wheat	8,462,658	11,070,167	7,455,522
Other cereals	2,825,577	3,464,805	1,998,051
Total	65,943,151	67,092,443	55,509,481
All other articles	61,860,696	64,367,985	75,384,566
Grand total	127,803,847	131,460,428	130,894,047

R. W. TURNER,
Consul.

UNITED STATES CONSULATE,
Cadiz, August 25, 1892.

CONSULAR REPORTS

ON

COMMERCE, MANUFACTURES, ETC.

No. 147.—DECEMBER, 1892.

CHINESE CURIOS.

REPORT BY CONSUL BEDLOE, OF AMOY.

Few collectors in the United States are aware of the wealth of China in all sorts of oddities and curios. There is an army of connoisseurs among the rich Mongolians, but they display little or no energy in accumulating art treasures. If they see something that strikes their fancy and they are satisfied with the price, they take it without a murmur. If it be 10 cents beyond what they regard as a fair limit, they walk off in high dudgeon. As a consequence, the curio market has few ups and downs. Nevertheless, it does an immense business the year through. The best patrons are naturally wealthy natives. Then come European collectors and experts. Ship captains and missionaries are also buyers of considerable importance. Last and least are the collectors of the United States.

There is hardly an artistic taste but can be gratified in the Flowery Kingdom. A full description of the art treasures to be seen in its great cities would fill many volumes. A résumé may be of interest to both the collector and the reading public.

ARMS AND ARMOR.

Of the former there are 1,100 types and 1,200 of the latter. The best workmanship in this line comes from Japan, and some admirable pieces are said to be of Korean origin. The Chinese work is extremely variable in quality and character, also in price, and, strange to say, the oldest and rarest weapons are sold at prices much below the charges for more modern and less curious implements of warfare.

In offensive weapons there is remarkable variety. On the coast its soldiers are armed with the latest rifles, while in the far interior they employ the same arms as were used by the vast hosts of Tamerlane and Zenghis Khan. Taking the Empire as a whole, the student or collector can find in use to-day every

weapon that has been employed within its borders since the time of Confucius. In addition to this, the mandarins and high officials arm their retinues with conventional weapons representing different periods in the history of the nation. On account of the changes wrought by time, many of these martial instruments are so incongruous as to be positively funny. Thus, for example, the Mongolian Tartars did their fighting on horseback, and one of their most formidable arms was a pole to which was attached a hook edged on the inside like a reaper's sickle. With this they would pull a rider from his steed, wounding or killing him in the action, or would hamstring the horse at a single stroke. This pole hook is no longer used by the few cavalry squadrons of China, but is found carried by footmen in nearly all the retinues of the great nobles. It looks formidable, but when used by infantry against infantry would be about as serviceable as an Indian club fastened securely to the end of a broomstick.

A glance at a collection of these arms shows that military uniformity was almost unknown to the Chinese generals of the past, and that the armies were made up of divers elements, armed usually with such implements used in peaceful pursuits as could be used in war. A common weapon is a trident, tined and barbed exactly as are those employed by fishermen in spearing eels. Similar to this is a three-pronged hay fork. Of equally bucolic origin is a long pole to whose end is fastened the end of a scythe or sickle. The European mace is suggested by a long-handled, light-headed hammer similar to that with which Charles Martel is said to have won his quaint name. It is obvious that these four weapons are of harmless origin. The first was the favorite instrument of fishermen and the second, third, and fourth of agricultural people.

Of the five types described there are no fewer varieties. The poles are bamboo or solid wood. They are plain, carved, or decorated with mother-of-pearl, metal, or cord. The heads are copper, brass, iron, pewter, or steel. Sometimes they are silvered, sometimes bronzed, lacquered, or gilt. Handsome ones are the exception and not the rule. The average retainer of a high official carries an arm whose pole is of the commonest wood stained red and whose head is of the poorest kind of cast iron or impure pewter. Many of these ominous-looking implements of war would not stand a light blow, both head and pole breaking at a very slight shock.

I have never seen any lances. The deficiency is made up by a surplus of spears and halberds. Of these the designs are varied, running from light and efficient points and edges to grotesque and hideous shapes that would frighten more than they would hurt. At times the workmanship is admirable. A spear captured by the French from the Black Flags in Tonquin is 8 feet long. The shaft is of ironwood, round, polished, and varnished, and reënforced here and there by wrappings of fine copper wire, and at the upper hand is incrusted the distance of a foot with mother-of-pearl. The end is ferruled with a large copper band, in which is set the spearhead. This is made of fine steel 6 inches in length and triangular in cross section. One face is

deeply grooved so as to allow a large amount of poison. These spears are used with great skill by the Chinese. Lee-Yu, a famous bandit, could throw one through a man at 50 yards. In the Franco-Tonquin war a powerful Chinese foot soldier drove his weapon entirely through two French infantrymen. It is claimed that the finer and handsomer spears are not of Chinese workmanship, but are made by Japanese, Korean, Anamite, and Malayan ironsmiths. How true this is I am unable to determine.

Of halberds there is great variety, ranging from the simple lochaber ax and poleax to the cumbrous and complicated masses of metal that were so common at the close of the age of chivalry. The oddest specimen was one which, instead of an ax blade on one side, had what appeared to be a hammerhead. It would make a serviceable implement for driving picture nails in walls near the ceiling.

In archery the Chinese have long been experts, especially those of Manchooria and Se-Chuen. Their bows are of three types: the long bow, which is over 5 feet in length; the short bow, which is about 4 feet long; and the crossbow. The strings are made of silk, of gut, or of very strong home-made twine wrapped with fine silk in the middle. Bows are graded according to their pull, the standard being 100 catties (about 135 pounds). To determine the pull the bow properly strung is suspended from the middle and weights hung to the middle of the string until the latter is nearly an arrow's length from the bow. Famous bowmen use bows with heavier pulls, ranging from 150 to 200 pounds, and one distinguished Robin Hood is said to have drawn a 200-catty bow (about 270 pounds). The bows vary greatly in materials, construction, decoration, and finish. They are made of one or several pieces of wood and are frequently inlaid or engraved until they are true works of art.

Worthy of mention are the tiger bows. These are extra large and heavy and are generally fastened to a framework near a path or road frequented by tigers or other large animals. It requires two men to set them, and they are so arranged that the moving of a cord stretched across the road disengages the bowstring and sends the arrow on its way. The force is so great that the shaft frequently comes out of the other side of the tiger, deer, or buffalo. To insure success the arrow is usually double barbed and envenomed. On the mainland, opposite the island of Amoy, these tiger bows are in constant use and annually kill at least 50 of these big beasts.

The weapons named are much cheaper than corresponding ones in the United States or Europe. The cheapest spears and halberds bring about 40 cents and bows 25 cents. From these figures the prices run slowly upward. A handsome poleax is easily had for $1, while weapons of the highest artistic value and finish can be secured for less than $5 each.

A handsome stand of arms, containing poleaxes, spears, halberds, swords, and daggers—two each—can be procured for about $25. A stand equally attractive in appearance, but made in imitation materials, can be had for about half that amount.

An American resident in Amoy was requested to execute a commission for a distinguished divine of the United States, a gentleman who, though a man of peace, has the finest, if not one of the best, collections of swords and other deadly weapons in the world. This led to the examination of several hundred rare and curious weapons sent him for inspection and approval. No two were alike of the lot selected, and not one that did not display rare skill on the part of the Chinese sword smith.

The handsomest of all is a general's saber about 4½ feet long, slightly Japanese in style, with an edge like a razor and a point that would extort admiration from an Italian bandit. Unlike our own, the thickest part of the blade is the center. This gives great weight to the weapon, joined to an appearance of great lightness. The scabbard is made of hard, tough wood, lacquered to represent black iron incrusted with mother-of-pearl. The hilt is of black iron molded in the form of a full-blown rose, the petals of which have been drilled with small holes and these filled with bright brass bars.

The most curious of the lot is the so-called warrior's two-bladed sword, from Ho-Nan. It is only about 2 feet long, and in the scabbard looks very like the sword bayonet of our own army. The scabbard is plain, but very neat, and covered with white shagreen (or shark skin) and trimmed with brass mountings. When you draw it the blade divides into two, each a facsimile of the other, double edged and spear pointed. The twin blades have a remarkable decoration made by drilling seven holes about an inch and a half in diameter and put in a zigzag line from hilt to point. These are filled with pure copper, which is ground down to form a smooth surface flush with the steel and polished to a mirror-like brightness. These seven stars, as they are called, are found in nearly all the martial weapons of Ho-Nan and are relics of the old astrologic faith that still prevails in many parts of China. Its hold is so strong that if the copper falls out of one of the sword holes it is accepted as a sure precursor of death, and the luckless wielder of the blade usually commits suicide to escape further trouble.

The short stabbing daggers, which find favor chiefly with pirates and revolutionists, form a strong contrast with the weapons described. They are generally so ugly that they would be ludicrous were it not for the purposes to which they are applied. I have one which looks like a queerly made ace of spades fastened into a wire-bound handle. To increase the artistic effect of the weapon, the armorer has hollowed out a shallow, spoon-shaped concave on either side of the blade and filled in with blood-red lacquer, the effect of which, when suddenly drawn from a black sheath, is very startling. Spades are not the only suit in the pack that is popular in the Mongolian mind. I have another weapon whose blade is a perfect ace of diamonds. All four sides are ground down to an almost concave edge, and the blade is made hideous by Chinese red lacquer work made to represent drops of blood and gouts of gore. Still another dagger is about the clumsiest affair of the kind I ever handled. The blade is a foot long, about 3 inches wide, and

half an inch thick. With its heavy brass hilt and gigantic guard it weighs over 3 pounds. If set with a long handle it can be used as an ax. It is used chiefly by the Black Flags and other celestial outlaws, who, in addition to using it in the ordinary manner, throw it with fatal precision. The ex-resident of Tonquin told me that during the late war he had known instances in which the knives were thrown with such force that they would go through a man's body and show 2 inches of bloody steel beyond his back. The handles of many of the instruments of death are finished with what we call pistol grips.

The most dreadful looking weapon of all is the executioner's sword, used by the late headsman of Amoy. It is of Manchoorian type, being long, almost straight, very heavy, and keenly edged. It is used with one hand, and is shaped and wound so as to give the executioner a powerful hold upon his weapon. Upon the blade near the hilt are Chinese characters recording the tragic events in which it has taken active part. My interpreter told me that it records no less than one hundred and ninety-three human lives which it has taken out of this world. This record enhances its value. A new sword of the same kind could be bought for $10 or $12, but for this sword, with its ghastly history, the thrifty broker wanted $200 cash. He evidently thought that, although it came high, I must have it and accordingly raised the price. He was a very heartbroken creature when I declined it with thanks.

A word of caution as to these Oriental swords and daggers: Very many of them are poisoned, so that a mere scratch will cause death. The venom is produced by steeping the blade in decayed human blood, and is one of the deadliest known to physiological science.

From now on for the next five years will be the golden opportunity for the collector to secure the finest specimens of swords. The market has never before contained and never will again such an assortment as regards either beauty, economy, historic value, variety, or workmanship. The reasons are simple enough. The opening of China and Japan to the outside world and the introduction of firearms was a fatal blow to the sword-smiths' industry. Before that event the makers of swords formed the wealthiest and most powerful guild in the East. The mediæval rivalry between Milan, Toledo, and Damascus was insignificant alongside of that of the great armorers of the Orient. Competition caused experiments in metallurgy, alloying, forging, and tempering that produced results of high value and disclosed mechanical secrets to the workers in steel that are unknown to the best cutlers of Europe and America to-day. They produced blades with perceptible tints in violet, blue, green, red, silver, and gold. Saladin's sword that would cut a veil or a cushion and Richard Cœur de Lion's, which would sever a steel mace, could have been duplicated in a hundred shops in the days of the Shogunate and the eighteenth-century mandarins. Upon the sword art ran mad. The smith learned to arrange the fibers of the metals so as to form geometrical patterns, the figures of flowers, fruits, and leaves, and even the Chinese char-

acters composing quotations from the great poets and philosophers. Their skill in this field bordered on the marvelous. You can obtain superb weapons even now which in the brightest light seem made from metal mirrors. Put them in the sunlight so as to cast a reflection on a dark surface, and in the illumination you will see in faint lines every pattern I have described. The effect is the same as that produced by the magic mirrors of Japan, but how it is done no one knows. The appearance of this flood of weapons upon the market is due to an additional cause. Under the ancient régime every noble, high and low, in Japan was attended by two-sworded men at arms, just as the robber barons of the middle ages were accompanied by steel-clad swashbucklers. In 1860 there were, it is estimated, at least 400,000 "two-sworders" in Japan. The revolution of 1868 changed all this in a twinkling. Sword-wearing, except by the police and the soldiery, who had the ordinary European weapon, was made a crime. The two-sworder lost his occupation, and his tools of trade were locked up as mementoes of the golden past. But twenty years have come and gone since then, the Mikadate is an established fact, and all hopes and desires of a return to the old feudal system have become mere echoes. A new generation has arisen which cares for money and not for the "hero's weapon," and the old one, which loved the blade for its past, is rapidly dying out. The consequence is that young Japan, with admirable thrift, is putting the weapons of his sires and grandsires in the curio shops to exchange them for yen and sen, the dollars and cents of their mint. In China the mandarin has sold his grandsire's blade and carries an umbrella instead. So many have taken this course that the market is more than glutted. Two-thirds of these weapons have tasted blood. All are interesting, a majority are very handsome, while a few hundred are simply superb works of art. The prices at times are so low as to be laughable; $3, $2, $1.50, $1, and even 75 and 50 cents will procure a weapon such as Broadway and Strand dealers have frequently sold for $50 and upwards. The low prices have put many noble weapons to ignominious uses. Here and there in rich farming lands the Oriental goes beyond the Biblical prediction and turns the sword into a plowshare, a reaping hook, a pruning knife, a carver, a poker, and even a skewer. One day I saw two fishes roasting on a blade which may have swung in the great wars between China and Japan.

There is no more handsome ornament to a drawing-room or library than a trophy of arms, and of these the most attractive is a set of old eastern swords, with their exquisitely carved hilts, their noble blades, and their fantastic yet ever beautiful scabbards.

While China can not compare with Europe in the beauty, richness, or variety of the defensive armor, it nevertheless can show many ingenious and interesting types.

The original armor of the north (Manchooria and Mongolia) seems to have been leather, and in shape was more like a blouse than a jerkin. In the course of years the skin was doubled, trebled, and quadrupled, and a Chinese lower garment that might be called leather greaves and cuirasses com-

bined was added to the upper one. The Mongolian nomads learned at an early age that a coat or cuirass made of sheepskin in several thicknesses made a very warm garment and would turn a spear, arrow, or sword. Apparel of this class is in use to-day and may be bought very cheaply in Shan-Toong. Parallel to this alternating of leather and wool in the north was that of paper and cotton cloth in the south of China. It seems ridiculous to call such combinations armor, and yet they make an armor superior in many instances to steel. Thirty thicknesses of alternate calico and paper will resist a pistol bullet or one from a rifle at a distance of 100 yards. A spearman who thrusts his weapon into a man clad in this kind of garment can neither wound his enemy nor extract his weapon, and, if the enemy is an archer or is armed with a long sword or javelin, he is likely to lose his life for his mischance. The suit of a famous Yun-Nan bandit consisted of sixty thicknesses of cotton cloth and paper and made him practically invulnerable. These suits are comparatively light, are very durable, and, of course, extremely cheap. Between these extreme types lie many kinds of plate, scale, and chain armor. Plate mail never reached a high development in the far East. I can not find that it ever passed beyond the combination of breastplate, backplate, and shoulder pieces. Scale mail, on the other hand, at an early period was carried to a high perfection. The scales were applied to cloth or leather at first as spangles are to gauze and later as tiles or slates are to the boards of a roof. They were composed of iron, pewter, silver, gold, or of various Oriental alloys. In making a suit scales of one kind were usually employed, but combinations were frequent in which metals of contrasting colors were used. A good suit of armor can be bought at prices ranging from $10 to $150.

Of the different pieces of armor the helmet alone deserves attention. The Chinese artist worked along a different channel from his European colleague and tried to make the headpiece monstrous and terrifying rather than protective. Designs representing the jaws of serpents, griffins, and dragons are very common, but such affairs as the barred and vizored helmet which Doré loved to draw are entirely unknown. Morions and skullcaps were also in general use and are to-day. The queerest type of all is the executioner's helmet. It resembles a high mouse trap or flytrap in wire and painted the conventional vermilion. Centuries ago the wires were flat and so arranged as to defy sword and ax, and, owing to their great height, disconcerted the archers of the opposing army. In the north, where wood is scarce, the helmet is made from woolen cloth, leather, and metal; in the west, where there are forests, wood was frequently employed; while in the south, in addition to these materials, cotton cloth and paper were also used. Helmets vary in cost according to workmanship and materials, and range from 50 cents to $50.

Shields and bucklers have been in vogue from time immemorial. The favorite type is a bossed circle from 2 to 3 feet in diameter similar to those employed by the Highlanders. Its composition is leather, metal, or woven split bamboo. Bamboo shields are very strong and durable. They are made

of a certain variety of that vegetable, which must have attained a certain size and hardness of fiber before it was fit for this particular purpose. The bamboo is split into pieces an inch in width and 4 feet in length, softened and braided in basketwork over a frame the size of the desired shield. It is dried in the sun and then in a kiln and afterwards polished and varnished. Its great strength and elasticity and lightness render it an admirable weapon of defense. A double thickness of bamboo with metal rim makes a buckler unlike any to be found elsewhere, and costs 50 cents. Unlike at home, the new weapons cost more than the old. Antiques can be had for a third or a fourth of the cost of new reproductions. Rich men in China prefer cheap imitation to originals, whether new or old, and the curio market scarcely knows armor as an object of virtu.

JOSSES.

Amoy and Canton are places which supply travelers and curio dealers with hideous idols, called "josses." They are manufactured, wholesale and retail, "moderns" and "antiques," orthodox or to order, as may be desired. I am sorry to be obliged to state that much of the joss business is a fraud, pious and otherwise. The regulation joss is either a very fat and placid gentleman with a large genius for lolling or a dignified, virtuous female with a superfluous number of arms and hands. But these styles did not suit merchants who desired to astonish their folks at home. So, to please their customers, the Mongolian joss-maker, with a keen eye for the main chance, turns out an assorted lot of clay hobgoblins warranted to freeze the blood of a small boy or produce hysterics in a nervous and dyspeptic girl. In this category come the man with the tiger face and ferocious fangs, the so-called "God of Hunger," who is only an everyday, half-starved opium-smoker, and the "Snake God," who probably is a phase of delirium tremens. None of these belongs to Chinese art. They are simply "fakes" made for the markets of Christendom.

Joss-making is very simple. The manufacturer's chief stock in trade consists of wooden or metal molds. In these the wet clay is put into shape and allowed to dry. It is then touched up, dipped in molten glaze, and allowed to cool. The average workman can turn out a hundred a day. The clay is kaolin, running from red and gray to snow white, and costs about a cent per pound. The glaze is melted in a small charcoal furnace, similar to the old-fashioned soldering furnaces of retired plumbers. The wages of a good artist vary from 20 to 40 cents per day. The cost of a fair-sized image is about 3 cents. He sells it for 5 cents to a native and for as high as $5 to the credulous European or American tourist. The molding, touching, and retouching are the same in all the shops. The glazing varies indefinitely. It may be opaque of any color, transparent but tinted with any shade desired, or clear and colorless. The best work is made by painting the clay with heavy white paint and dipping in the glaze last described. In another kind of good work the clay is colored in caustic colors, kept in the heat

until these have set, and then glazed as usual. The Chinese are very skillful in this field of labor, and with fine brushes will turn out josses that at first sight might be mistaken for cloisonné.

Antiques are popular with the dealers, as they can be planted and dug up to order from any desired age or dynasty and bring a handsome profit. The simplest is the "black joss." It is made by painting a clay cast with a preparation of tar, bitumen, shellac, or Ningpo varnish, wrapping in several thicknesses of paper, and firing it in a kiln. According to the preparation and treatment, you can obtain a black-brown, red-black, blue-black, or a dark-gray product. The color sets through, so that a fracture discloses a very clean and uniform surface. There is little or no vitrification in this treatment, which makes the cast resemble a carving all the more. "Touching" removes any irregularities or defects, and also adds the signs of decay which usually accompany the flight of years.

Another and very different group of josses are those carved from wood and covered with gold and gay colors. Many of these are very ancient and are much more in demand than the pottery ware. They are carved with evident skill and retain their brightness for years. The prices vary according to size, workmanship, and amount of gold or other decorations covering them. The smallest made are but an inch high and bring a few cents. The largest are 10 to 12 feet high and cost $150 to $500 and upwards. In the larger sizes (say those of more than a foot high) the carving is admirable and the coloring lifelike and very artistic. There are four of these large-sized josses in the famous temples of Lam-po-do, at the entrance of Amoy harbor, and they produce as imposing an effect as any collection of statues in the galleries of Europe.

Josses carved from stone are rare and dear. Great mandarins pay fabulous prices for small ones made from jade; those made of the pale-green and light-blue shades are much more valuable than the white, yellow, or brown. Liu, the former governor of Formosa, owns a joss about 8 inches high which is said to be fifteen centuries old and to be worth $10,000. Small ones of 1 to 2 inches high seldom cost less than $200 to $250.

The difficulty of cutting the refractory stone is great and is the chief reason for its high price.

In Fuchau they make many josses out of steatite and selenite of various colors. These are rather neat and are very cheap. The softness of the stone allows the dealer to give a newly carved image the appearance of great antiquity by rubbing it with a little fine sand. An hour's work removes all shape lines and produces that effect which marks all ancient statues from the Sphinx downward.

SOAPSTONE FIGURES.

In almost every modern drawing-room there is an ungainly statue or carving in soapstone which the owner vaguely says came from Japan, China, or somewhere in the far East. Where they really do come from is Fuchau, which, next to Amoy, is the greatest and most important city in the prov-

ince of Fo-Kien. A few are carved in Amoy, Wenchow, Chan-Chan Foo, and Canton out of the soapstone rock which occurs in inexhaustible deposits in the vicinity of Fuchau. But neither in quality, much less in quantity, will the output of all these three places combined compare with that of the latter city.

The soapstone, or steatite, to use a more accurate word, is quarried almost like ordinary building stone. It is singularly free from flaws or blemishes and often comes out in pure blocks of a cubic yard. The purest quality comes in smaller pieces. Fineness from a Chinese standpoint is a matter of translucency, color, and distribution of shading. No other steatite can compare with this in variety and brilliancy of color. In a collection imported from Amoy by Simon Muhr, esq., of Philadelphia, there are objects in black, brown, maroon, carmine, indigo, ultramarine, French gray, orange purple, yellow, bister, sienna, and opal. Usually a carving is made of one color, but some are even in polychrome.

The Fuchau carvings are famous in China and are found in every city and town. The simplest are basso and alto relievos upon irregular plaques, ordinary plates, and clumsy vases. The figure is a joss (the conventional deity), a patron saint, a hero, demigod, or dragon.

Sometimes the artist is a portrait-cutter and, instead of an imaginary creature, turns out a very fair representation of a human being. The carvings of this class are very cheap, ranging from 15 cents upward. The relief portraits command prices from $1 to $5.

A second class of work are articles of domestic utility—paper weights, inkstands, joss-stick holders, pin boxes, jewel cases, pedestals, and the like. They are cut in simple geometrical forms, are highly polished, and decorated with floral designs and serpentine work. They are not dear, costing from 5 cents to $1.

A third class consists of statues and animal figures. The dragon, the Dog of Happiness, the Heavenly Poodle, Buddha, Sira, the Goddess of Mercy, fishes, buffaloes, and lions are the favorite designs of both maker and buyer. In size the carvings range from a mere toy half an inch high to handsome pieces of 2 feet square. There is a wide range of prices, a rough dragonet bringing a few coppers, while a large and well-executed Goddess of Mercy is quickly sold at $40 to $50.

A fourth class is essentially Chinese. They call it a "dramatic picture." It is a brave attempt to do in one piece of stone what Cellein did in a dozen panels of metal work. The stone, taken as a whole, is carved into a conventional mountain with impassable roads, viaducts, and caverns. At every point which pleases the artist's fancy is carved a human figure. They are out of perspective and out of proportion in every respect. Two warriors, for example, are fighting on a bridge whose timbers are like matches. Two lovers are trembling in a cavern, while the girl's irate father, as large as a baby, confronts them at the entrance. A horse whose head is larger than his trunk is about to be devoured by a dragon the size of a mouse. So the

incongruities run on. In spite of the ludicrous unnaturalness, the workmanship excites admiration. The infinite patience with detail, the enormous labor expended upon the work, and the charming chromatic effect from the well-chosen colors of the steatite are worthy of a high and noble art. These dramatic pictures are not overcostly. They range from $1 to $25 apiece. The native artist is a poorly paid fellow. He is satisfied with 35 cents per day, while his apprentices are delighted with even much less. They belong to a powerful guild which has a history of ten centuries and are as proud of their art as an R. A. is of his productions with the brush.

CASH.

Collections of "cash" are of considerable interest. They are small coins of bronze, brass, copper, or silver ranging in intrinsic value from one-twentieth of a cent to 25 cents. The oldest of these coins on record appeared about 2300 B. C. Over 150,000 different kinds of cash are preserved in collections. Some are wonderful examples of coinage, but most of them are clumsy and coarse. In this field the East is a paradise for the numismatist. He can work all his life, spend very little money, and leave to posterity thousands of coins. All he need do is to confine his work to the collection of cash, the small coins in brass and bronze whose value ranges from one-tenth to one-fourteenth of a cent. Their workmanship varies, but is usually very good. Their shape to-day is like that of European coins, with the exception that through the center is a square hole through which the coins are strung together like beads. In the past, however, other forms were employed, including the square, triangle, heart, ellipse, shield, key, sword, and spear. The number of kinds is simply immense. They are referred to in the literature as far back as 250 B. C. The earliest that I have heard of dates from the Ts'in dynasty, which ruled from 255 to 207 B. C. From that time until to-day these useful little coins have been issued by every monarch, no matter whether he was Emperor of the entire country or king of one of the petty principalities into which from time to time the Chinese Empire was broken. There have been over one thousand two hundred occupants of the various thrones, royal and imperial. In addition to these regular issues, if such they may be called, there have been special issues from time to time, and also special local issues. A wealthy mandarin in Canton is said to have the finest collection extant, containing 25,000 specimens of different kinds.

The cost increases as you go backward in time. The cash of this century can be secured at their nominal face value. Those of the eighteenth and seventeenth centuries bring from 1 to 10 cents each. Those of the Han dynasties, from A. D. 206 to A. D. 100, bring $100 each when in fine state of preservation.

These true antiques are found in ancient tombs and ruins. Several hundred were discovered in Amoy this year in digging a grave, when the laborers broke into an old tomb several feet below the surface of the soil.

The coins lay in a pretty earthenware jar, and were incrusted with a thin layer of malachite that here and there had been changed by moisture into azurite. The coins were sold by the lucky coolies in the next twenty-four hours and are said to have brought $1 apiece, an immense sum to men working for 12 cents a day.

To succeed in collecting cash a person must be a fine Chinese scholar. The labor thereby involved is so severe as to preclude most collectors from indulging in the pleasure to any great extent.

TEA-ROOT CARVINGS.

For more than a hundred generations there has been a guild of artists in the province of Fo-Kien whose life work is the carving and modifying of the gnarled and interlaced roots of the tea tree into things of beauty, that is, beauty from a Celestial point of view. The herb whose leaves gladden western palates in the form of Oolong, Hyson, and Souchong is a hardy plant and takes a firm hold on mother earth. Its roots seem to have no regular law of growth. Sometimes they develop very much as a beard sprouts from the chin; at others they separate and move along in parallel lines as if they were a lignose centipede. In general it may be said that they make a large, clumsy mass from which shoot out anywhere from three to thirty rootlets. Their surface is never smooth, but always irregularly corrugated. The value of a root depends upon its size, its outline, its freedom from decay, and its suggestiveness of some everyday object. It is rare that a main root or root mass is more than 6 inches in diameter. Such belong to trees ranging in age from thirty years to a century. Infrequently they attain to 12 and 15 inches, and are then said by Chinese experts to be four and five hundred years old.

The roots are dug from the soil and allowed to thoroughly dry in the open air under a shed or else in a moderately warm room. The loose earth is carefully removed, as is the loose bark and all pieces decayed, cracked, or worm-eaten. The artist then determines what it is to be. The favorite types are dragons, buffaloes, cows, carnivores, bears, mandarins, priests, howling dervishes, dancers, or mythical heroes. If the root can not be worked into one of these shapes, it is converted into a pedestal or platform for a figure piece. The primary operation consists in sawing it into rough shape. This is done with a fine crosscut and the clean edges removed by rubbing them on tiles or bricks. Sometimes a root is bent by softening it with steam or boiling water and then twisting it in any desired direction. Now comes the hardest task of all. The most valuable piece is that which shows no art and seems perfectly natural. The carver goes over the block, removing here a fiber and there a set of roots, here thinning out one on the under side and forcing it down and there burning another and expanding it at the burned point. I have one in my drawing-room which is a capital figure of a dragon, rearing and opening his jaws as if to spring upon his prey. Careful examination shows that nothing has been added to the mass, but that hundreds of fibers, knots, and corrugations have been skillfully removed.

In nearly every instance a human figure made in the same manner or carved from wood of the same color, or else made partly from tea roots and partly from carved wood, is added to the first piece. The designs are endless in this field. Learned men lecturing, birds, mandarins standing on dragons, boys riding cows and other ridiculous quadrupeds, dancing beggars, and men fighting each other are the commonest groups, but of the more uncommon there are thousands. One famous artist in Fuchau claims to have produced, with the aid of his apprentices, over fifty thousand different designs, and, judging from his stock on hand, his claim seems reasonable enough.

The tea-root carvings are seldom very costly, running from 50 cents to $1.00. Nine-tenths bring less than $2 each. A handsome set of a dozen can be purchased for $20, which will decorate a drawing-room or hall better than bric-a-brac many times more expensive. The figures are strong, durable, and in no danger of fracture by servants. Outside of their æsthetic value, they are of interest in showing the wonderful ingenuity and economy of the Chinese.

"FIGURETTES."

An odd art industry in Amoy is the making of tiny images, which are variously known as "figurettes," or "little devils." They are statuettes ranging from half an inch to 3 inches in length and are molded from a paste whose composition is a trade secret. It would be better to use the plural than the singular, for each community of modelers uses a paste different from that of the others. Among the ingredients employed are hard wax, insect wax, glue, vegetable gum, linseed gum, papier-maché, burned umber, sepia, kaolin, ultramarine, yellow ocher, chrome yellow, vermilion, white of egg, and pulverized eggshells. Rather a wide field to choose from. The backbone of the figure is a stick of hard, dry wood left rough to give a better purchase to the paste. Upon this are molded the head, toes, and one leg. The other leg and the arms are stiffened by wires or thin pieces of wood. The coarse work is done by boys, girls, women, or apprentices, who are remarkably quick and skillful. They use their fingers in outlining and a variety of little wooden tools in producing textures, hair, beards, and weapons. The figures are then handed over to the artists, who are always men. They finish the features, give an expression to the face, and remedy any defect or mistake of their subordinates. The figures are then carefully dried. According to the composition of the paste, this is done in a warm room, a cool current of air, a kiln, or the open sunlight. The best kinds are dried in a warm room and require from three to eight weeks before they are thoroughly done.

The figurettes are divided into two classes—toys and art objects. The former are built upon long sticks, like jumping jacks. The wired arms are jointed loosely to the body, so that when the stick is whirled they gyrate in a very amusing manner. The workmanship is coarse and the cost a mere trifle, ranging from 1 to 2 cents per figure or from 10 to 20 cents per dozen. The other kind are built upon short sticks, which are fastened into small

wooden platforms so as to stand upright. Their workmanship varies, some being rude and clumsy and others very fine. Their variety is infinite. One set of one hundred represents all the characters in a great classic drama. Another set of the same number embodies the various types in the armies of a heroic Chinese king and a savage monarch whom he has conquered. A third consists of two hundred figures of the various vocations of daily life. Other sets are those of distinguished generals, famous kings, heroic queens, poets, lawgivers, engineers, and admirals. The leading artist in this quaint industry claims to carry five thousand separate faces in his memory and to be able to reproduce any one in paste at the word.

The figurettes are made in colors or monochrome. When colors are employed, the greatest care is bestowed upon the correct tinting of details. The crown is gilt, the bracelets silvered, and the coats, undercoats, and trousers colored according to the style and age to which they belong. The historic accuracy in many cases is admirable. On the other hand, the modeling of colored figures is usually mediocre or worse. The features are poorly outlined and the fingers, weapons, and ornaments indicated rather than molded.

In monochrome the reverse is the case. The paste is dark red, brown, or brown black, and every detail is wrought out with the greatest care. On a figure an inch in height the eyelids, earring holes, and finger nails are often so well executed as to bear scrutiny with a strong magnifying glass. As might be supposed, the cost of this class is higher than that of the other, and runs from 3 to 6 cents per figure or from 30 to 60 cents per dozen. How the artist manages to live upon the rates is a profound mystery.

The Chinese have a happy knack of displaying all kinds of figurettes by placing them in miniature theaters, temples, or pleasure grounds. A glass box 8 by 10 by 5 inches containing diminutive trees, rocks, and twenty-five figures can be purchased for $1.

Next to a trip through China, nothing can give a better notion of the endless variety and brilliancy of costume than a set of two hundred figurettes, or "little devils."

CARVED FRUIT STONES.

Nothing is wasted in China. The stones of various fruits and the shells of nuts are cleared, dried, and carved into ornaments of the most graceful kind. Among the stones used are the olive, plum, peach, lai-chu, and cherry, and of the shells the walnut and cocoanut. The stones are selected with care; each must exceed a certain standard of size, proportion, hardness, and weight. They are dried slowly and at such a heat as not to crack or sprout and are then ready for the carver. The designer marks a rough outline of the future group or picture and hands it over to his boys or apprentices. These work with great rapidity and soon block out the design, cutting through the hard ligneous tissue, and then extract the kernel. A second treatment now takes place to dry the interior of the stone, as well as to prevent the fine lining of the interior from undergoing decomposition.

This completed, the designer sketches a second outline, and also indicates by his pencil or brush where the surface is to be lowered, pelted, made into leaf work or arabesquery, or be cut altogether away. The work is performed by the subordinates as at first. The designer then does the finishing touches, after which the assistants clean, polish, and oil or wax the perfected carving.

The stones are sold in this shape to quite a large extent, but more largely in other forms. Among these may be mentioned buttons, watch charms, sleeve links, earrings, and brooches, and, when strung together, bracelets, anklets, necklaces, watch chains, rosaries, and official ornaments.

The price of a stone varies greatly with the workmanship and the fame of the carver. Some may be bought as low as 10 cents apiece, others command as high as $2 and $3 each. The average price is 30 cents a stone with a handsome discount for purchases in quantity. The carvings display great variety and beauty. One class represents bunches of flowers and leaves, in which pistils, stamens, and tendrils are accurately executed. Similar to these are fruits and flowers and flowers and leaves. A second class is composed of carvings of birds, reptiles, and higher animals. The dragon, griffin, stork, nake, horse, lion, tiger, camel, elephant, and bull are the favorite figures. I do not recall ever having seen a cat, dog, wolf, sheep, goat, or other animal beyond those specified. A friendly mandarin, to whom I stated this, said that a canon in Chinese carving was to reproduce only those animals which had been deified, and that the ten mentioned were about the only ones which had enjoyed divine honors. A third class, and by far the most interesting, comprises groups of human figures representing scenes in history, poetry, mythology, and the drama. The workmanship is often so fine as to be microscopic in its delicacy. In fact, the finishing touches are made by the artist while using a magnifying glass of at least fifty diameters. On stones not over an inch in length along their major axis it is not uncommon to find eight, nine, and ten characters in different attitudes and costumes. Unlike most phases of Chinese art, there is much regard paid to perspective and foreshortening. Some of these pieces might have been made by Hindoo or Italian artists, so free are they from local or racic conventionalism. Nevertheless, in the main, conventionalism is all prevailing. Dignity always wears a beard, and low comedy with villainy are disguised with queer markings and quaint attitudes. The horse has a head twice too large, and the dragon carries a tail which in real life would have insured his prompt destruction. Gods wear queues and goddesses stroll about on compressed feet. But was there ever a school of art of any sort free from conventionalism? Even were there one, it would probably be as unsatisfactory as the most artificial systems of our own civilization or of this strange and mighty one upon the borders of the China Sea.

EDWARD BEDLOE,
Consul.

UNITED STATES CONSULATE,
Amoy, July 30, 1892.

ITALIAN EXPORTS TO THE UNITED STATES.

REPORT BY VICE-CONSUL-GENERAL WOOD, OF ROME.

*Table showing the value of declared exports from the consular districts of the Kingdom of Italy to the United States during the year ended June 30, 1892.**

Articles.	Value.	Articles.	Value.
Alabaster, wrought	$59,734.28	Hemp:	
Anchovies	751.02	Carpet yarns	$55,294.65
Animals, breeding	2,030.00	Tow	351,543.60
Antimony	1,650.24	Herbs, dry	1,127.23
Antiquities	6,027.38	Household goods	28,439.60
Argols and wine lees	1,301,263.72	Iron and brass ware	2,058.69
Asphalt and bitumen	45,909.18	Iron ore	615,375.12
Beans	39,561.15	Ivory, wrought	287.38
Beeswax	5,003.90	Japanese articles	234.49
Bee queens	112.52	Juniper berries	5,771.98
Bones	5,300.60	Lace and embroidery	3,196.58
Books	6,705.31	Laurel leaves	367.72
Boracic acid	27,939.59	Lemon citrons in brine	553.23
Briarwood	41,156.06	Lemon juice	92,195.97
Brimstone and sulphur	2,117,712.48	Licorice	35,801.21
Bronzes	32,153.96	Lime	1,763.01
Buttons	1,148.87	Liqueurs	25,015.00
Caoutchouc ware	2,032.67	Manna	13,669.46
Cement	240.15	Marble:	
Cheese	265,620.44	Blocks	469,042.96
Chemical preparations	4,250.87	Chippings	2,302.62
Chestnuts, extract of	1,734.62	Slab	99,526.00
China ware and majolica	2,356.30	Statuary	159,565.03
Citrate of lime	36,990.05	Tiles	7,493.14
Citron	3,253.25	Wrought	32,649.64
Cloths, ornamental	2,006.58	Matches	2,396.39
Clover	2,418.29	Medicinals	6,411.13
Cosmetics	1,790.83	Mineral water	456.41
Cutlery	711.12	Mosaics	7,158.32
Dog grass	858.73	Mushrooms	5,209.66
Earthenware	486.94	Musical instruments	605.96
Ecclesiastical vestments	463.39	Nuts	57,487.82
Essences	485,997.63	Almonds	233,407.96
Fans	2,597.23	Chestnuts	29,162.59
Figs	2,345.59	Filberts	195,291.21
Filagree, silver	12,317.97	Hazelnuts	11,206.95
Fish, salted and in oil	10,954.63	Pistachios	11,277.00
Fruit	707,723.55	Walnuts	37,979.86
Candied	289,292.67	Olive oil	663,866.21
Dry	1,044.53	Olives	4,074.05
In spirits	289.50	Orange peel	2,988.22
Fruit juice	546.68	Oranges and lemons	5,528,129.91
Furniture, frames, and carved wood	31,197.63	Orris root	22,791.70
Garlic	8,067.15	Paintings	90,787.02
Glassware and beads	31,117.52	Paper	543.46
Gloves	146,688.42	Passementeric	1,535.05
Glycerine	43,967.45	Paste	437,516.10
Gum arabic	10,309.77	Peas	11,446.79
Gunstocks	6,277.15	Plaster casts	1,778.89
Haircloth	4,047.90	Plumbago	961.35
Hair:		Preserves	1,465.00
Horse	14,019.12	Pumice stone and bricks	51,078.99
Human	27,529.74	Rags and waste	495,622.88

* As declared at the several consular offices of the United States in Italy.

Table showing the value of declared exports, etc.—Continued.

Articles.	Value.	Articles.	Value.
Rice	$20,774.34	Straw goods:	
Roots	459.34	Braids and plaiting	$483,804.52
Rush baskets	5,547.87	Hats	9,465.84
Salt	73,536.26	Strings for musical instruments	579.65
Sausages	7,403.54	Sugar of milk	1,188.26
Scrap bronze	564.19	Sulphur oil	26,320.77
Seeds:		Sumac	297,391.19
Canary	23,550.47	Sundries	159,150.03
Mustard	14,784.35	Surgical instruments	284.00
Unclassified	64,951.08	Talc	7,363.88
Shell work	1,039.11	Tartar	3,506.59
Sienna earth	14,421.32	Tiles, cement	2,129.16
Silk:		Tomatoes	673.63
Manufactured	240,879.02	Twine	449.71
Raw	5,004,192.57	Umber earth	7,879.94
Waste	91,431.34	Velvet	1,040.13
Silverware	3,028.43	Wine	230,166.87
Skins	86,573.75	Wood, olive	608.40
Soap	209,674.10	Wool, manufactures of	425.76
Soap stock	50,037.19	Total	22,927,182.91
Spun silk, waste	10,922.41		
Squills	1,206.29		

CHARLES M. WOOD,
Vice-Consul-General.

UNITED STATES CONSULATE-GENERAL,
Rome, August 16, 1892.

COMMERCIAL YUCATAN.

REPORT BY CONSUL THOMPSON, OF MERIDA.

The fiscal year ended June 30, 1892, has been one of trial to Yucatan. Her corn crop, from which her laborers gain their chief sustenance, has not failed her; therefore, there has been no special lack of food supply. The sugar and tobacco crops have been fair, and the prices of these commodities have ruled firm. With all these facts it would seem as if the peninsula of Yucatan should abound with contentment and prosperity. The fact is the country has not yet recovered from the effects of the high prices of 1887–'89, and is now suffering from the debility that inevitably follows an era of feverish prosperity and extravagance.

Merchants, thinking, as they have always thought in all lands under similar circumstances, that the high prices and feverish activity would continue forever, launched into ordering goods far beyond the resources of their capital. When the crash came—for it was a crash in every sense of the word—and hennequen fiber, the sisal grass of commerce, Yucatan's only commercial hope, dropped in price from 11 cents per pound to 5 cents, and slow sales at that, the merchants were left with expensive stocks on hand, large bills coming due, and no money to pay them with. Then commenced

the debility that follows financial fevers, and but for the helpful actions and shrewd management of a few financial pillars of the country great distress would have overtaken the merchants of Yucatan. For a while it seemed as if even these doctors of finance would have to give up their patient's case as hopeless. At last the prospects are brighter, and, while the debility still continues, it is the feebleness of healthy convalescence and not the fatal decline of mercantile death.

Business can not take a very active part while exchange is at 45 per cent premium, yet it is gradually regaining its forces to take advantage of the first signs of a renewed prosperity.

The people of Yucatan, merchants and planters, are to be congratulated on the successful way in which they have passed through a very dangerous stage in their financial growth, and I see no reason to doubt a future of prosperity, the more sure because based upon facts and not inflated ideas.

HENNEQUEN FIBER.

I here append such data and statistics as I have been able to collect concerning the past and present output of hennequen fiber, the most important commercial factor in the prosperity of the Yucatecan peninsula. During the fiscal year ended June 30, 1892, there were exported to the United States 286,000 bales, having a value of $3,914,827 in United States coin. Within the last five calendar years (1887–'91) the total output of hennequen fiber for the State of Yucatan amounted to 1,258,247 bales, having a value in round terms of $15,000,000 in United States coin. Of this total output within the above period the United States consumed 92½ per cent, Great Britain took 5 per cent, Germany accounted for 1 per cent, while Spain and her colonies provided for the remaining 1½ per cent.

With these figures in mind, showing in a startling manner how closely the prosperity of Yucatan depends upon that of her sister States of the great northern Republic, it is eminently proper and natural that she should look more to them—to New York, to New Orleans, and to Boston—for her purchases and less to Europe than she has hitherto done. And it has come to be a fact. Merchants in Boston and New York who less than a decade past could recall Yucatan only by taking down their atlases now know the names and even the faces of her principal merchants. The result of all this is seen in the shop displays of Merida, at the dinners of the merchants, and in the wearing apparel of all classes. American goods are fast taking the place of European products, and I see no cause why this happy state of affairs should not continue until every store is filled with American goods sold directly to the merchants of Yucatan by our merchants. This consulate is always ready to do its utmost to aid in bringing about this happy result.

EDWARD H. THOMPSON,
Consul.

UNITED STATES CONSULATE,
Merida, July 7, 1892.

TRADE OF CHIN-KIANG IN 1891.

REPORT BY CONSUL JONES.

As my previous dispatches have advised the Department, the valley of the Yang-tse-Kiang has been in a disturbed condition for the past three years, which has caused a feeling of more or less insecurity and the derangement of the ordinary course of trade, though the statistics of the customs continue to show an increase of business throughout the entire length of the great river. This disturbance has affected the interest of foreign trader and foreign goods more than is shown by the volume of trade itself. In addition to the widespread disaffection among the people, the local officials throughout the region in question have instituted schemes of taxation which they term "voluntary subscription" and which the Chinese merchants do not pay out of their own pockets, but charge on the foreign goods, whereby the foreign trade is injured. So far as this consular district is concerned, I have applied such remedies as were in my power to prevent these schemes and protect the trade, with what result I do not yet know, though I am encouraged to believe favorable.

In a review of the trade of Chin-Kiang for the year 1891 it was necessary, before going into particulars, that I should give the situation as above, as that has had a more or less depressing effect both on the price of and the demand for foreign products. The only exception seems to have been in the amount of kerosene oil sent into the interior under transit passes, and that was entirely in Chinese hands covered by a foreign name.

The import of this article for 1891 shows a falling off as compared with 1890, but the amount sent into the interior an increase, which is accounted for by the large quantity stored in godowns, or warehouses, at the close of 1890.

Shortly after the riot of Woo-Hoo, an open port in this district 100 miles above Chin-Kiang, holders of all kinds of foreign merchandise lowered their prices with the expectation of thereby increasing their sales; but, though there was a drop of 18 candareens (1 candareen=1½ Mexican cents) per piece on American sheetings, 20 candareens on American drills, and 25 candareens on ordinary shirtings (6½ and 7 pounds) and a like fall in prices on other merchandise, holders found it difficult to clear their godowns. It may also be noted, as denoting the precarious state of the foreign-goods trade, that, though the disturbances (riots) were for the first nine months of the year 1891 confined to the Yang-tse Valley, the demand for foreign products in the northern provinces, or, more correctly speaking, in Ho-Nan, Shan-Toong, and the southern part of Shan-Hsi, fell off 90 per cent. Thus in 1890 they sent 6,454 bales of from 65 to 110 pieces per package to the provinces above mentioned; in 1891 they only sent 1,300 bales. In metals (except steel and lead) and kerosene oil a very much greater falling off was

experienced. The price of kerosene oil dropped 12 candareens per case, that is, deliveries were made for 1.12 taels, instead of 1.24 taels.

At the end of July, 1891, the import of foreign merchandise almost entirely ceased, except such as were sold to arrive, that is, sent into the interior immediately on arrival by dealers who had purchased previous to that date (July). It is also a curious fact that such metals as steel and lead were sent into the interior in larger quantities from May to the end of September, 1891, than during the same period in any previous year, though the effects of the riots on the demand for these articles should have been the same as on other merchandise.

If we turn to the question of the purchasing power of native products, we find that there was an increase in this respect over 1890, which can be accounted for by the smaller quantity put on the market and the uncertainty connected with the supposed influence of the secret societies, an inciting factor in the Yang-tse riots. The increase on lily flowers was $2 per picul; melon seeds, $1.25; walnuts, $1; and some of the medicines as much as $5. As the dealers in native produce carry their sales to credit for the purchase of foreign merchandise, they should, it seems, have realized handsome returns in their transactions, for the simple reason that foreign products were sold for less, and native for more, than the usual rates. I have been informed that the prices for foreign merchandise in the interior were maintained thus: Shirtings were sold for the piece at 3.15 taels, kerosene oil at 1.35 taels, and so on.

Foreign merchandise sent into the interior under transit passes in 1891, compared with 1890, was as follows:

In 1891 the quantity of American sheetings sent was 8,927 pieces; in 1890, 7,262 pieces; increase, 1,665 pieces. In value the difference was: In 1891 at 2.68 taels, 23,924.36 taels; 1890 at 2.80 taels, 20,333.60 taels; making an increase of 3,590.76 taels. At the end of 1890 there was a fair quantity stored in godowns, while at the end of 1891 all piece goods had been cleared for inland.

Of American drills the quantity sent inland was as follows: In 1891, 20,620 pieces; 1890, 22,179 pieces; decrease, 1,559 pieces. In value the difference was: In 1891 at 2.40 taels, 49,488 taels; 1890 at 2.60 taels, 57,655.40 taels. As will be seen, the number of pieces sent inland in 1890, as well as the value, was considerably in excess of 1891. The average price during 1891 was 2.40 taels per piece; in 1890, 2.60 taels.

The number of pieces of English shirtings imported, most of which were sent inland under transit passes, was: Gray, 1,078,998; white, 138,356. The gray shirtings were of the 7-pound variety valued at 1.05 taels per piece.

Of woolen goods, such as lastings, camlets, long ells, Spanish stripes, and broad medium cloths, 27,183 pieces were imported, valued at 204,658 taels (haikwan sycee). All but 2,500 pieces were sent inland under transit passes. Of blankets 162 were sent inland, valued at 2.80 taels per pair, and of figured orleans 5,068, valued at 11,361 Chin-Kiang taels.

The following table is taken from the books of the Chinese customs at this port:

Table showing the trade in foreign goods.

Metals.	Imports from Hongkong and Chinese ports.		Reëxport to Chinese ports and Hongkong.		Net total imports.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
Iron:	*Piculs.**	*Taels.*†	*Piculs.**	*Taels.*†	*Piculs.**	*Taels.*†
Nail rod	50,225.22	110,495	4.2	9	50,221.02	110,486
Bar	4,151.84	8,304	.....	.....	4,151.84	8,304
Hoop	333.66	500	.....	.....	327.31	490
Sheets and plates	937.4	5,624	.....	.....	937.4	5,624
Wire	4,945.26	19,781	.....	.....	4,945.26	19,781
Pig and kentledge	3,360	4,000	.....	.....	3,360	4,000
Old	68,024.9	81,804	150	188	67,874.9	81,616
Ironware unclassed	1,867.15	4,472	20.91	44	1,846.24	4,428
Tin:						
In slabs	219.59	4,831	.....	.....	219.59	4,831
Tin plates	538.67	1,724	1.68	5	536.99	1,719
Lead in pigs	10,721.92	32,166	.....	.....	10,721.92	32,166
Copper:						
Bar, rod, sheets, plates, and nails	245.11	4,412	.....	.....	245.11	4,412
Old	96.9	992	.....	.....	96.9	992
Wire	44.47	981	.....	.....	44.47	981
Unmanufactured, copper slabs, and ore	1,687.78	21,941	2.2	29	1,685.58	21,912
Copper ware unclassed	1	20	.....	.....	1	20
Yellow metal (bars, rod, sheets, and nails)	207.06	3,313	8.44	135	198.62	3,178
Brass wire	160.43	3,209	.....	.....	160.43	3,209
Steel	4,630.92	15,745	96.43	327	4,534.49	15,418
Mild (iron ingots)	500	632	.....	.....	500	632
Spelter	69.77	370	.....	.....	69.77	370
Quicksilver	32.55	1,400	.....	.....	32.55	1,400
White metal, German silver, and nickel	317.9	11,939	.....	.....	317.9	11,939
Zinc	430.06	1,272	4.27	30	425.79	1,242
Metals unclassed	134.45	1,295	.....	.....	134.45	1,295

*The picul is equivalent to 133⅓ pounds avoirdupois.

†The haikwan tael, equivalent in American money (gold) to $1.20.

A. C. JONES,

UNITED STATES CONSULATE, *Consul.*

Chin-Kiang, July 16, 1892.

THE PORT OF MARSEILLES.

REPORT BY CONSUL TRAIL.

From time immemorial Marseilles has held a leading position, both as the largest commercial port of France and as one of the busiest harbors on the Mediterranean shores. The history of the port can be traced back through many centuries till we arrive at a period where reliable historical evidence becomes mingled with tradition and where it is impossible to regard the statements that have come down as other than mere conjecture.

The earliest date assigned for the foundation of this port is B. C. 1200–1000, when, it is alleged, certain Phœnician settlers established trading posts in this locality; and this theory—that the city owes its origin to the Phœnicians—has been strengthened by certain archæological traces which were brought to light during the opening up of a street in 1863. Classical tradition, however, but with less supporting evidence, ascribes the foundation of "Massilia" to a colony of Phocæans, who emigrated with their families from Asia Minor to escape the tyranny of Cyrus (B. C. 600), and of whom mention is made by Herodotus and Horace.

To whatever founders the city may look for its origin, its rapid development is a matter upon which there lies no shadow of doubt. It soon acquired sufficient force to enable it to contend with and conquer Carthage in a sea fight, and it was looked upon at an early date as an important factor among the Mediterranean naval powers.

The most ancient portion of the port of Marseilles is the "Vieux Port," a basin of 70.5 acres in area, at present devoted almost exclusively to sailing vessels. From the primeval period spoken of above down to the end of the fourteenth century this basin was left in its natural state, at which period two towers were erected, one on either side of the entrance, and a chain stretched between them at night for protection.

It was only in the sixteenth century that the construction of quays was commenced, the edges of the port consisting hitherto simply of sloping banks, which necessitated the existence of light boats or barges for the loading and unloading of ships. The first quay was constructed by order of Louis XII in 1511 on the north side of the harbor, and a similar one was erected fifty years later on the south side by the city of Marseilles. These quays were very narrow and rudimentary in their construction; and the depth of water at their base was so slight that it was impossible to bring ships up alongside, and not only so, but the port was continually being decreased in depth by the deposit of sewage from all the drains in the town. As a natural consequence we continually find minutes in the archives of the town of considerable sums of money devoted to the cleansing of the harbor.

The first important steps taken to enlarge and develop the old port date from 1782, when two canals were run out from one side of the basin parallel to one another and their extremities joined by a third arm, the channel so formed being known as the "Canal des Douanes." Ten years later the shipping had so increased that it was extremely cramped, and various projects for the extension and amelioration of the harbor were put forward, which were not realized, however, till a considerably later period. Of these the most noteworthy was the creation of a quarantine harbor, which was effected in 1822–'23 by the construction of a breakwater between the islands of Pomègues and Ratoneau, a few miles off the coast and opposite the town.

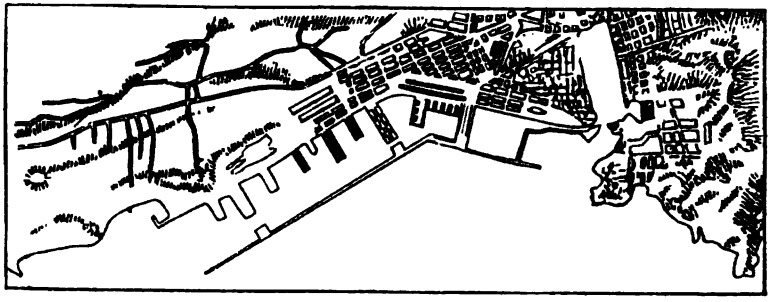
The first project for the construction of a new harbor at the Joliette dates from 1829 and was put forward by Mr. J. Garella, engineer of bridges and roads at Marseilles. The actual works, however, were only begun about 1844, and their cost up to the present day has been about $16,984,000.

The new basins are situated to the north of the old port and are protected by a breakwater 3,937 yards long, which is built in a depth of water varying from 36 to 92 feet. The total area of the new basins with the old port is over 400 acres, and the development of the quays is 18,117.61 meters. In the construction of the latter concrete plays a very important part, but it may be remarked that in the old port and part of the basins at the Joliette the original method of laying the substructure of the quays has not given very satisfactory results. The manner of construction was as follows: The foundation consisted of a mass of concrete that was run into a wooden casing and allowed to harden, when the casing was removed; this concrete construction was carried up to the water level, and upon it was built a wall of ordinary masonry, covered and faced with freestone. The principal defects in this system of construction arose from two causes—instability of the soil under the foundations and imperfections either in the composition and mixing of the concrete or in the manner in which it was allowed to flow into the casing.

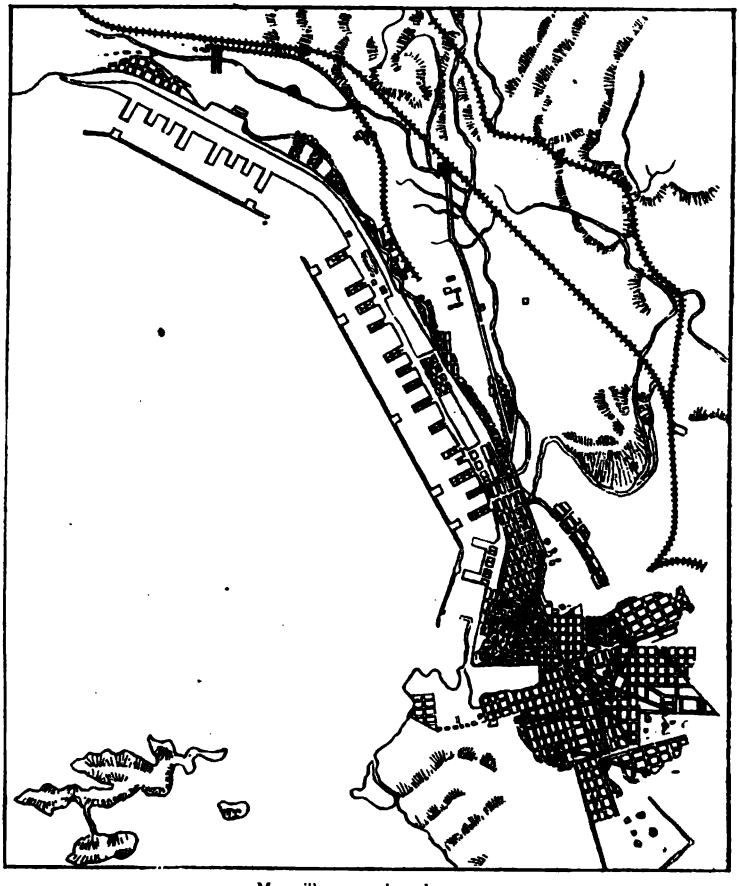
The quays which have been constructed since 1857 are built on another plan. A bed of stones is laid as a foundation, and on this a series of huge artificial blocks is placed, without any mortar between them. This series is continued up to the water level; but, before the wall that is to form the front of the quay is built upon it, the system of blocks is subjected to great pressure, by means of two rows of similar blocks which are placed upon it, in order to make the subsoil and foundations settle quickly into the shape they will definitively assume. The two rows of blocks are then removed, and the wall is built in the usual way. This method of construction has given the most excellent results, and the quays so formed are second to none either in appearance or in durability.

The progress made in developing the port of Marseilles in the past one hundred years is so well illustrated in the report of the Marseilles Chamber of Commerce at the Paris Exposition of 1889 that I introduce the cuts here as the easiest and most satisfactory way of letting the city tell its own story of advancement.

Marseilles, 1789.



Marseilles, 1889.



Marseilles as projected, 1900.

Table showing the number and tonnage of vessels entered at the principal ports of the world in 1832 and 1887.

Ports.	1832.		1887.
	Number.	*Tons.*	*Tons.*
London	5,697	1,050,147	12,307,166
Liverpool	2,840	678,965	7,940,788
Marseilles	7,201	629,780	4,820,370
Constantinople	3,237	406,424	*8,666,012
New York	.....	400,385	†6,087,110
Havre	3,596	388,552	2,485,357
Hamburg	4,308	386,313	3,920,234
Genoa	5,880	350,410	2,953,894
Rotterdam	2,223	291,366	2,448,284
Hull	1,714	262,935	2,223,857
Leghorn	3,387	253,150	1,355,602
St. Petersburg	1,404	246,357	.....
Amsterdam	2,340	245,681	913,647
Trieste	1,747	232,528	1,384,877
Bordeaux	3,068	225,348	1,928,446
Alexandria	1,269	220,682	1,618,036
Habana	1,068	186,359	1,351,732
Nantes	3,853	168,147	.....
Boston	.....	157,811	†1,282,159
Antwerp	1,246	151,042	3,717,738
Rouen	2,452	940,836	823,942
Smyrna	1,152	116,705	1,420,668
Ostend	934	110,331	.....
Newcastle	755	102,377	.....
Nice	1,565	107,465	.....
Hongkong	.....	.....	6,550,000
Ports on the Tyne (Shields, Newcastle, etc.)	.....	.....	6,002,475
Suez Canal	.....	.....	5,903,024
Cardiff	.....	.....	5,344,426
Chicago	.....	.....	3,926,318
Malta	.....	.....	3,301,987
Sunderland	.....	.....	2,837,152
Glasgow	.....	.....	2,713,698
Buenos Ayres	.....	.....	2,400,000
Newport	.....	.....	2,299,254
Bombay	.....	.....	2,135,385
Lisbon	.....	.....	2,041,966
Naples	.....	.....	1,729,069
Valencia	.....	.....	1,665,884
Calcutta	.....	.....	1,553,575
Barcelona	.....	.....	1,515,250
Bremen	.....	.....	1,444,683
Carthagena	.....	.....	1,355,105
Canton	.....	.....	1,333,134
Philadelphia	.....	.....	†1,290,762
Palermo	.....	.....	1,259,511
Santander	.....	.....	1,200,000
Dunkirk	.....	.....	1,128,716
Messina	.....	.....	1,080,479
Cette	.....	.....	1,041,752
Venice	.....	.....	998,563
San Francisco	.....	.....	†965,054
Savona	.....	.....	754,439

* Bosphorus and ports.

† The figures given for the ports of the United States appear to refer to ocean commerce without including the coasting trade.

Table showing movement of the port of Marseilles in the year 1792.

[From the custom-house returns.]

Countries of origin or destination.	Entries.		Clearances.	
	No.	Tons.	No.	Tons.
Ports in the Levant and Barbary	350	54,500	400	68,000
Italian ports	950	95,000	1,050	106,000
Spanish ports	350	56,000	410	75,000
Baltic, Dutch, etc., ports	120	24,000	100	20,000
French possessions in America	92	36,800	88	35,200
Pondicherry, Chandernagore, and Bourbon			3	1,300
	50	2,000	24	960
French ports on the high seas	130	3,000	152	31,920
Mediterranean coasting trade	400	24,000	390	23,400
Total	2,442	322,300	2,617	361,780

NAVIGATION IN 1891.

The statistics of navigation at the port of Marseilles show an increase in the maritime movement of this port for the year 1891 as compared with the year 1890. The total number of vessels which entered and cleared during the year 1891 was 18,079 having an aggregate tonnage of 10,610,820 tons, as against 17,249 entries and clearances with a tonnage of 9,702,046 tons in 1890. Of this total of 18,079 vessels there were 1,236 entries and clearances connected with international commerce, of which 335 were made by sailing vessels and 901 by steamers, with the respective tonnage of 151,090 and 1,596,229 tons. The number of entries and clearances in the coasting trade was 16,843 having an aggregate tonnage of 8,863,501 tons; and of these 6,116 entries and clearances were made by sailing vessels and 10,727 by steamers, with the respective tonnage of 821,318 and 8,042,183 tons.

As compared with 1890, there is an increase in the entries and clearances made by sailing vessels of 301, and of those made by steamers of 529, with a total increase of tonnage amounting to 898,774 tons.

Five hundred and eighteen vessels carrying the French flag and engaged in international commerce entered and cleared at Marseilles. These had a tonnage of 779,136 tons. Eight hundred and seventy-six vessels carrying foreign flags and having a tonnage of 1,099,371 tons entered and cleared in the same year. In the coasting trade the entries and clearances of vessels sailing under French colors were 12,337 with a tonnage of 5,620,351 tons, and of those sailing under foreign flags there were 4,348 entries and clearances with a tonnage of 3,141,962 tons.

The total registered tonnage of all merchant vessels which entered or cleared during the year 1891 amounted to 10,610,820 tons, an increase of 908,774 tons as compared with that of 1890, while, on the other hand, the weight of merchandise transported by this shipping was 5,275,291 tons in 1891, against 5,003,236 tons imported and exported during the preceding year.

The following tables show the details of the maritime movement of the port of Marseilles for the years 1890 and 1891:

Table showing arrivals and departures of vessels at the port of Marseilles during the year 1891.

ARRIVALS.

Description.	Steamers.		Sailing vessels.	
	No.	Tons.	No.	Tons.
French.				
Long voyages	205	368,435	11	4,976
Coasting trade	3,983	2,632,255	2,191	191,968
Foreign.				
Long voyages	347	616,284	64	39,348
Coasting trade	1,262	1,202,020	951	252,333
Total in 1891	5,797	4,818,994	3,217	488,625
Total in 1890	5,534	4,405,602	3,020	464,707

DEPARTURES.

French.				
Long voyages	209	364,884	49	16,968
Coasting trade	4,008	2,637,560	2,189	182,451
Foreign.				
Long voyages	140	246,626	211	89,798
Coasting trade	1,474	1,570,348	785	194,566
Total in 1891	5,831	4,819,418	3,234	483,783
Total in 1890	5,565	4,367,364	3,070	464,373

Table showing the nationality of vessels entered and cleared at the port of Marseilles during the year 1891.

Flag.	Entered.				Cleared.			
	Long voyages.		Coasting trade.		Long voyages.		Coasting trade.	
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
Foreign:								
American	2	1,545	.....	.....	.....	.....	2	1,545
Austrian	20	9,897	82	50,815	40	25,382	57	33,639
British	308	525,449	442	505,723	82	139,542	672	891,170
Danish	12	3,675	22	12,278	6	1,753	27	12,809
Dutch	30	44,100	27	42,439	27	39,923	33	48,858
German	21	21,571	57	43,872	19	12,642	64	58,628
Greek	.....	.....	284	118,571	.....	.....	260	110,593
Italian	75	45,633	540	197,230	93	45,281	528	193,245
Russian	6	4,426	9	6,549	7	5,079	10	6,807
Spanish	5	8,608	432	292,648	20	37,178	426	266,605
Swedish and Norwegian	38	17,842	162	91,316	40	18,624	170	95,116
Turkish	.....	.....	9	2,536	.....	.....	7	2,687
Other	11	22,925	20	30,307	14	28,266	16	25,976
Total foreign	528	715,701	2,086	1,394,284	348	353,670	2,262	1,747,678
French	256	386,786	6,144	2,810,848	262	392,350	6,193	2,809,503
Grand total in 1891	784	1,102,487	8,230	4,205,132	610	746,020	8,455	4,557,181
Grand total in 1890	736	920,142	7,778	3,951,067	532	591,884	8,103	4,239,858

Table showing number and tonnage of vessels entered into and cleared from the port of Marseilles and weight of merchandise transported by them during the years 1890 and 1891.

Description.	1891.			1890.		
	Vessels.		Merchandise transported.	Vessels.		Merchandise transported.
	No.	Tons.		No.	Tons.	
Arrivals.						
Steamers:			*Tons.*			*Tons.*
French	4,188	3,000,690	1,157,993	4,084	2,815,390	1,217,502
Foreign	1,608	1,818,304	1,855,369	1,450	1,591,780	1,605,537
Total steamers	5,796	4,818,994	3,013,362	5,534	4,407,170	2,823,039
Sailing vessels:						
French	2,202	196,944	253,030	2,129	205,194	239,352
Foreign	1,016	291,681	360,765	951	257,945	297,016
Total sailing vessels	3,218	488,625	613,795	3,089	463,139	536,368
Total French vessels	6,390	3,197,634	1,411,023	6,213	3,020,584	1,456,854
Total foreign vessels	2,624	2,109,985	2,216,134	2,401	1,849,725	1,902,553
Total arrivals	9,014	5,307,619	3,627,157	8,614	4,870,309	3,359,407
Clearances.						
Steamers:						
French	4,217	3,002,434	904,104	4,108	2,785,860	858,574
Foreign	1,614	1,816,984	382,599	1,457	1,581,500	396,069
Total steamers	5,831	4,819,418	1,286,673	5,565	4,367,309	1,254,643
Sailing vessels:						
French	2,238	199,419	137,351	2,089	201,116	170,005
Foreign	996	284,364	224,110	981	263,252	219,181
Total sailing vessels	3,234	483,783	361,461	3,070	464,368	389,186
Total French vessels	6,455	3,201,853	1,041,455	6,197	2,986,976	1,028,579
Total foreign vessels	2,610	2,101,348	606,679	2,438	1,844,761	615,250
Total clearances	9,065	5,303,201	1,648,134	8,635	4,831,737	1,643,829

CHAS. B. TRAIL,
Consul.

UNITED STATES CONSULATE,
Marseilles, August 10, 1892.

SUGAR-REFINING IN NICARAGUA.

REPORT BY CONSUL NEWELL, OF MANAGUA.

One of the most notable additions to the industries of Nicaragua is that of the San Antonio sugar refinery. The men who have undertaken this work are among the most prominent in this Republic, and their connection with the enterprise is a guaranty that it will be a success. The sum involved in this enterprise is something like $500,000.

This sugar estate is situated in the department of Chinendega, 23 miles from Corinto, one of the finest harbors on the Pacific coast, and 3 miles from

Chichigalpa, a station on the line of the National Railroad. The National Railroad runs from Corinto through Chichigalpa and Leon, the largest town in the Republic, to Momotombo, on Lake Managua. From Momotombo there is a daily service of steamers to Managua, the capital, which is again connected with Masaya and Granada. From Granada there is another service of steamers to San Juan del Norte, also known as Greytown, touching at San George, which latter place is connected by a tramway with Rivas, the center of the great cacao district of this country. The means of communication in Nicaragua are far better than in any of the adjacent republics.

Chichigalpa is in direct communication with all the principal towns in the Republic. The town of Chichigalpa has a population of about 5,000 and will provide all the labor necessary for working the estate.

The property consists of about 4,500 acres of very fertile soil, which, according to an analysis made in London, is eminently suitable for the cultivation of sugar cane, cacao, and other tropical products. The estate is watered by five streams yielding together about 16,000,000 gallons of water every twenty-four hours. Three of these streams have already been dammed for the purpose of irrigation. The estate has been surveyed and the levels marked, and the plan proves that the whole property is well adapted for a system of irrigation. There are several houses on the estate; also a good assortment of agricultural implements, including a number of carts. There are 175 acres of pasture land stocked with oxen, horses, and cows.

A complete sugar-making plant, with the latest modern improvements, producing 22 tons of sugar every twenty-four hours, was purchased last year in Glasgow. The mill buildings, which are all of iron, are already erected, and the machinery, amounting to 1,500 tons, has arrived at Corinto. A part of this machinery has been transported to San Antonio, and the rest will be shipped as soon as possible so as to have everything ready to grind the first crop of sugar cane in the coming December or January. This crop will be from 437 acres of cane now planted and which is in splendid condition. An equal number of acres of land have been cleared and are now being put in cane. It is expected that the production this year will amount to 1,800 tons of sugar and 40,000 gallons of rum. It is the intention, when the plant is in full working order, to produce annually 3,000 tons of sugar and 80,000 gallons of rum.

A narrow-gauge railway is being constructed from Chichigalpa, passing through the estate; this, in conjunction with a portable railway, will be used to carry the cane to the mill. The rails and cars were purchased in England and with the machinery have arrived in Corinto.

The consumption of sugar in Nicaragua is at present estimated at 3,000 tons annually. About three-fourths of this is imported, and the price this year has been 15 cents per pound. The projectors of this industry feel confident of being able to dispose of three-fourths of their sugar in this country for at least 10 cents per pound, and that Costa Rica presents a good field

for the disposition of the balance. Though the company have confidence in selling their sugar at 10 cents per pound, they have, however, based all their calculations on selling the sugar at 5 cents per pound and the rum at 30 cents per gallon. Even at this, the very lowest possible figure, it is thought that the company will pay a dividend of 25 per cent on the capital of between £70,000 and £90,000, which is the estimated cost of the estate when in full working order.

The company have estimated their expenses according to the following table to produce 3,000 tons of sugar and 80,000 gallons of rum annually:

Description.	Amount.	Description.	Amount.
1 engineer	$3,000	10 men to sew and mark sacks	$600
1 assistant engineer	720	40 men with portable railway for carrying cane to operating works	2,000
1 administrator	1,800	Food for men during harvest	7,000
6 overseers at $720 each	4,320	Food for officers and staff	800
1 foreman	720	6 guards	900
2 carpenters at $480 each	960	30,000 tons of cane, contract cutting	5,400
1 cook	720	60,000 sacks at 25 cents per sack	15,000
During crop time:		Oil, tallow, etc	1,000
16 men at $4 per month for 6 months	384	80 men to work in field during wet season	5,376
6 men at $4 per month for 12 months	288	Food for same	1,500
2 servants at $120 each	240	General expenses	2,000
3 men for herding cattle	504	Contingent expenses	7,000
30 men at the mill for 5 months	1,440	1 triple effect	100
8 clarifiers	480	1 sugar-boiler	1,200
3 distillers for 6 months	200	8 centrifugals, 5 months	480
1 storekeeper	600		

The expenses enumerated above amount to $66,012, to which is added a dividend of 25 per cent on $500,000, the estimated working capital of the company, making $125,000, and a reserve fund of $12,985, a total expense of $204,000.

The company estimate that their revenue will be equal to a like amount—$204,000.

The estate is exceedingly well situated and well watered. The plant in course of construction is very complete, and the immense cane fields present such an appearance as to leave no room for doubt as to the fertility of the soil. The prices estimated for the sale of the produce are so far below the present selling prices as to leave a wide margin, and the estimate for expenses is decidedly liberal considering the price of labor here. This business, in my opinion, will be a very profitable one and should give far greater returns than the dividend of 25 per cent, as estimated by the company.

WILLIAM NEWELL,
Consul.

UNITED STATES CONSULATE,
Managua, July 15, 1892.

LIMES AND LIME TREES IN THE LEEWARD ISLANDS.

REPORT BY VICE-CONSUL GALBRAITH, OF ANTIGUA.

The date of the introduction of the lime tree into these islands is a matter of conjecture. So far back as 1791 it is recorded that large quantities of the fruit of this tree were exported from Dominica to England and America. It was not, however, until about the year 1850 that the systematic cultivation of the tree began by Dr. Imray in Dominica, and quite independently by the Messrs. Sturge in Montserrat. During the first decade of the existence of this industry little progress was made. However, it lived, and early in the sixties the demand for it began to increase, and the cultivation of the tree and the manufacture of lime juice has gone on slowly increasing up to the present time.

The area under cultivation in Montserrat this year will be about 1,200 acres, of which about 900 acres are in fruit-bearing trees. The industry is carried on in a more systematic manner in Montserrat than in any of the other islands of the group, the Montserrat Company having had for several years a competent chemist to superintend the manufacture of lime juice and to advise in the agricultural management of their orchards. The work he did is still bearing fruit, and to-day Montserrat is the chief seat of the lime industry of the Leeward Islands.

There is a considerable quantity of lime juice manufactured in Dominica, but there the orchards are smaller, and, with one or two exceptions, the same care is not exercised in the cultivation of the trees nor in the manufacture of the juice. The industry is, however, growing, and, if the government succeeds in forming roads through the island, it is expected that there will be a large increase in the cultivation of lime trees, as well-cultivated lime orchards are said to pay a good return. It is impossible to estimate the area in lime cultivation in Dominica. There are no official returns, and the majority of cultivators do not plant in regular orchards, as is done in Montserrat.

In St. Christopher and in Antigua the cultivation of the lime is unknown. Neither of these islands manufactures lime juice for export. The few trees scattered over the islands supply the inhabitants with sufficient fruit for their own use, which is used principally in making various beverages and for culinary purposes.

The trees are raised from seed in nurseries and transplanted when 10 to 18 inches high to the orchard, where they are planted in rows about 15 feet apart, each acre requiring from 175 to 200 plants, light sandy loam soil being best suited to their vigorous growth. In Dominica, where the soil is rich, the lime tree attains its greatest height and yields the most fruit, a large juicy lime which is very rich in citric acid. A lime tree will grow in almost any soil, but the fruit is small, and the life of the tree is not so long as in rich, well-cultivated lands. From three to four years from the time of transplant-

ing the tree begins to bear fruit; about five years, however, would be the average time for fruit-bearing, and it continues to bear for over twenty years. From the seventh to the fourteenth year the tree is in full bearing condition. After this, if the orchard is to be continued, young trees must be planted to supply the place of the older ones as they wear out. The tree blossoms all the year if there be rain; but March and April are the principal flowering months, and the fruit begins to ripen in June, when the lime harvest begins, and reaches its height in August. From then on to December the yield decreases each month until February, when it ceases to yield fruit.

The largest crops are gathered in years in which the rainfall is heaviest. The average yield of fruit from an orchard in full bearing would be about 60 to 80 barrels (an ordinary flour barrel is employed in all orchards to gauge the quantity of fruit) from an acre per annum. This could, it is believed, be greatly exceeded by careful cultivation and manuring. A barrel of fruit will yield from 6 to 7 gallons of juice, and each gallon of sound, ripe juice contains from 12 to 15 ounces of citric acid.

The tree is subject to blight, which causes much trouble and materially affects the yield of fruit. No efficient remedy has as yet been found for this evil. With better cultivation and manuring, I have no doubt, this would be remedied, as only the weak and sickly trees appear to suffer.

The fruit when ripe falls to the ground and is collected by women and children and carried to the works, where it is measured by an overseer, who credits each person with the amount collected each day; and on Saturday the quantity collected by each gatherer is paid for at the rate of from 6 to 12 cents per barrel, according to the scarcity of the fruit and the distance of carriage.

The produce exported from a lime plantation is as follows: Raw and concentrated lime juice, green and pickled limes, and essential oil.

Raw lime juice is simply the juice from good, sound, ripe fruit carefully preserved in casks. For the best quality the limes are crushed between the rollers of a mill. Old cane mills are usually employed for this purpose. The first two rollers are carefully adjusted to admit the lime; the second and third usually extract all the juice, which is then run into casks and is ready to ship. Most of the raw lime juice is sent to the English market.

In the manufacture of concentrated lime juice the crushing is done in the same manner as for raw lime juice. The fruit for concentration is not selected as for raw lime juice. On plantations where raw is manufactured the fruit which is unfit for manufacturing into raw lime juice is crushed and manufactured into concentrated lime juice. This process consists in boiling the juice in open pans, such as are used in the manufacture of muscovado sugar, until it is reduced to from six-eighths to one-tenth of its volume; it is then a black viscid fluid containing from 80 to 100 ounces of citric acid per gallon. When the juice has been concentrated to the desired strength, it is run into second-hand beer casks and shipped principally to the New York market.

The export trade in green limes is very small, and is not increasing; the small quantity which is shipped goes to the English market. The fruit is carefully selected, picked from the trees, wrapped in paper, as is usually done with oranges, packed carefully in crates, and shipped.

Another form in which the fruit is exported consists in selecting good, sound, ripe limes and placing them in casks, over which is poured salt water or strong brine. The cask is then made perfectly tight and exported. Limes preserved in this manner are invariably sent to Boston. The brine has to be changed frequently during the process before the fruit is properly pickled. The quantity exported in this manner is very small, and, like the export of green limes, is not increasing.

I can not get figures showing the quantity exported in this manner, but believe the number of barrels or casks must be very few.

Essential oil, another valuable product obtained from the lime, is made largely on the Montserrat Company's estates and on a number of estates in Dominica. There are two kinds of essential oil of limes: the handmade, which is the most valuable; the other, an oil procured by distillation. The handmade commands a much better price, as its perfume is not affected by the heat necessary in distillation. The common mode adopted of extracting this oil from the lime consists of the use of a shallow concave metal plate shaped like an ordinary saucer, in which are studded a number of blunt copper spikes, from the center of which there is a tube, in which the oil runs as it escapes from the rind of the lime. The tube serves as a handle, and the lime is gently and quickly rolled over the blunt copper spikes until all the oil sacs are burst, and the oil escapes and runs into the tube. When the tube is full, the oil is poured into bottles and securely corked. Women are generally employed at the work, and they select only the finest fruit, which yields the greatest quantity of oil. The limes so used are then put through the mill for the manufacture of lime juice. When the bottle is full, it is allowed to stand for some time until the water and other impurities settle. The oil is then carefully drawn off and filtered as it is run into tinned copper vessels ready for export. Most of the oil exported from Dominica is manufactured by distillation from the lime juice which leaves the mill. It is very much inferior to handmade. It is chiefly employed now for scenting soaps and in the manufacture of common essences and perfumes. There are other modes adopted of procuring essential oil from limes; but, as they are not generally adopted by the majority of manufacturers either in Dominica or Montserrat, I do not think it necessary to describe them.

There is no doubt but that great improvements could be made both in the cultivation of the limes and the manufacture of its products if more scientific methods were adopted, but as long as the present way pays there is no hope of any improvements. The great majority of those engaged in the industry lack capital and are unable to make the improvements they see necessary, and, being unable to borrow, continue to run in the old grooves until the industry becomes unprofitable and they are forced to yield to lands

which are not so rich, but which are cultivated by men who have the energy and capital to make inferior lands yield better than these islands, which are so well adapted for the cultivation of the lime.

There are no local buyers in any of these islands; consequently manufacturers ship their produce to either the English or New York market. The price is about the same in both places, but I am told the results from New York were slightly better than those from England. For the last two years many of the Dominican shippers have been sending their produce to the English market, owing to the New York purchasers having deducted from the sales the cost of freight and other charges, which formerly were paid by the purchaser.

The average shipments from Montserrat for the last five years were as follows: Raw lime juice, 800 puncheons of 120 gallons each; concentrated, 200 casks of 54 gallons each; green limes, 1,000 boxes; pickled limes, 300 barrels; essential oil, 2,500 pounds.

SAMUEL GALBRAITH,
Vice-Consul.

UNITED STATES CONSULATE,
Antigua, July 20, 1892.

GERMAN FOREIGN TRADE.

REPORT BY CONSULAR CLERK MURPHY, OF BERLIN.

Table showing the importations into and exportations from the German customs territory during the year 1891.

Articles.	Imports.		Exports.	
	Quantity.	Value.	Quantity.	Value.
	100 kilos.	*Marks.*	*100 kilos.*	*Marks.*
Waste materials, manures, rags, etc.	5,755,902	55,535,000	1,267,887	11,335,000
Cotton and cotton wares	3,059,177	311,939,000	785,262	235,285,000
Lead and lead wares	186,782	4,950,000	325,457	10,040,000
Brush and sieve makers' wares	8,222	3,380,000	16,048	14,551,000
Drugs, chemicals, and colors	9,122,792	242,496,000	5,214,928	251,952,000
Iron and iron wares	3,792,524	48,933,000	12,133,870	277,032,000
Earths, ores, precious metals, asbestus, and asbestus wares	28,742,495	375,998,000	31,247,983	209,744,000
Flax and other vegetable spinning stuffs, with exception of cotton	2,209,804	95,428,000	709,382	40,037,000
Grain and other agricultural products	49,132,961	804,776,000	6,541,278	132,007,000
Glass and glass wares	131,471	9,351,000	928,798	38,548,000
Hair (horse, human, etc.), feathers, and bristles	120,946	45,982,000	42,431	26,229,000
Hides and skins	983,836	144,555,000	366,717	70,762,000
Wood and wooden ware, etc.	36,670,719	230,244,000	10,533,789	144,433,000
Hops	23,622	7,485,000	102,161	27,231,000
Instruments, machines, and vehicles	482,846	40,390,000	1,137,742	131,357,000
Calendars	520	114,000	590	130,000
Caoutchouc, gutta-percha, and wares thereof	55,085	35,199,000	39,700	27,483,000
Ready-made clothing and body linen, also millineries	4,107	10,607,000	76,976	125,267,000

Table showing the importations into and exportations from the German customs territory during the year 1891—Continued.

Articles.	Imports.		Exports.	
	Quantity.	Value.	Quantity.	Value.
	100 kilos.	*Marks.*	*100 kilos.*	*Marks.*
Copper and copper wares	430,061	57,461,000	297,036	61,053,000
Hardware, fancy wares, etc	7,814	46,116,000	82,597	88,509,000
Leather and leather wares	105,775	54,258,000	150,998	162,255,000
Linen yarn, linen, and other linen wares	177,571	31,007,000	181,164	33,975,000
Candles	1,122	101,000	12,471	998,000
Literary and artistic articles	41,100	30,493,000	140,068	93,423,000
Groceries, spices, liquors, etc	12,908,146	769,565,000	17,413,266	490,633,000
Oil not otherwise specified and fats	4,915,547	155,748,000	1,100,329	31,551,000
Paper and paper wares	226,000	8,866,000	1,457,375	90,399,000
Furs	2,951	1,355,000	5,359	3,866,000
Petroleum	8,123,074	83,639,000	247,188	6,528,000
Silks and silk wares	56,876	184,326,000	70,371	202,834,000
Soap and perfumes	12,707	2,379,000	47,592	9,422,000
Playing cards	36	13,000	953	334,000
Stone and stone wares	7,784,168	43,799,000	5,415,661	25,500,000
Coal, coke, peat, etc	123,111,485	113,273,000	110,550,714	150,879,000
Straw and bast wares	16,018	5,640,000	12,979	4,820,000
Tar, pitch, resin, and asphalt	1,523,116	23,812,000	564,626	7,634,000
Animals and animal products not otherwise specified	1,027,090	93,896,000	93,037	9,684,000
Pottery, porcelain, etc	1,595,973	5,734,000	2,915,422	34,090,000
Horses, cattle, etc	2,831,034	232,526,000	212,232	21,466,000
Wax cloth, wax muslin, etc	6,992	1,326,000	4,838	974,000
Wool and woolen wares	1,893,055	401,846,000	705,186	345,746,000
Zinc and zinc wares	81,519	3,677,000	747,005	37,727,000
Tin and tin wares	91,711	17,188,000	13,434	4,106,000
Incompletely declared wares	1,919	716,000	57,910	11,817,000
Total	307,456,671	4,836,122,000	213,970,880	3,703,846,000
Total in 1890*	.....	4,273,000,000	.....	3,410,000,000

* Estimated.

GEORGE H. MURPHY,
Consular Clerk.

UNITED STATES CONSULATE-GENERAL,
Berlin, August 10, 1892.

PORT AND TRADE OF ROUEN.

REPORT BY CONSUL WILLIAMS.

The sum of 706,500 francs was expended in 1891 out of the appropriation of 9,400,000 francs contributed by the chamber of commerce, the department, and the city of Rouen for repairing the dikes.

For a long time the bureau of navigation has studied the subject of lighting the channel of the bay of the Seine and made attempts to navigate the estuary by night. A decree of the minister appropriated a credit of 100,000 francs for procuring sixteen luminous buoys for lighting the channel. These will soon be placed in position and their practical utility tested.

The amount of 440,000 francs was expended upon the equipment of the port of Rouen, chiefly in dredging and improving the facilities for loading and discharging vessels. The tonnage of this port, constantly and rapidly increasing from year to year, indicates that the equipments of the port and its facilities for handling and transmission by rail or canal have been appreciated by shippers, and that the difficulties of navigating the Seine have been overcome. Ships arrive here daily from the most distant ports on the globe, while regular lines ply between Great Britain, the ports of northern and southern Europe, and this port.

The direct imports from the United States to this port consist of but few articles. These staple commodities vary each year according to the stern requirements to supply the deficiency of crops in France or the requirements of manufacturers, as they are principally raw materials, to which only the labor of cultivation or excavation has been applied.

Paris is the wholesale market which supplies the rest of the country with the few articles of American manufacture introduced into France. Among these agricultural implements and sewing machines take the lead and have an acknowledged superiority over all others. Tinned American fruits, vegetables, oysters, clams, etc., are ordered from Paris and seldom kept in stock.

The importation of petroleum is large and increasing; but the farmers, by their influence, subject it to a high tariff in the hope of lighting France with rape-seed oil.

Statistics would indicate that the exports from this consular district had fallen off during the last year, while in reality they have increased. This apparent discrepancy is owing to the fact that Roubaix, Lille, and Dunkirk, contributing to the list of a portion of the year 1891, have since been detached.

The principal increase has been in the item of laces and tulles. These articles are fashionable, popular, and cheap. The pattern, style, and material in vogue are subject to much change, and this fact seems to deter our manufacturers from competing for this trade. Great ingenuity and skill are exercised in this branch of manufacture. A very small quantity of material is required, the machinery, men, and women employed work long hours, and the coal consumed is near the works; all of these circumstances enable the manufacturers to offer these goods at a very small price.

The French, as I have shown in a former report, took the first steps in this manufacture against great opposition and built it up at the peril of their lives.

CHAS. P. WILLIAMS,
Consul.

UNITED STATES CONSULATE,
Rouen, August 3, 1892.

TRADE AND COMMERCE OF MALAGA.

REPORT BY CONSUL NEWSON.

In business matters during the past year there has been but little change here over that of 1891. The season, however, has been especially marked by continuous rains, lasting off and on for some thirty days, a longer period of this character than has ever before been known in this region; but no severe storms have occurred, nor have the crops been affected in this vicinity, although in Almeria the grapevines have been affected by mildew, which will greatly reduce the yield. The health of the city and district continues good, and general improvements in Malaga seem to be the order of the day.

ALMONDS.

During the fiscal year ended June 30, 1891, 29,439 boxes of almonds were exported to the United States, and during the fiscal year ended June 30, 1892, 48,363 boxes were shipped, being an increase of 18,924 boxes over the fiscal year 1891. Owing to the high winds and the rains while the trees were still in blossom in the spring, the embryo crop was materially injured, so that there will be a short yield this year.

GRAPES.

The fiscal year ended June 30, 1891, showed a shipment of 256,387 barrels of grapes from this consular district to the United States. During the fiscal year ended June 30, 1892, 204,219 barrels were exported, leaving a decrease of 52,168 barrels during the last fiscal year.

In 1891 the yield of grapes in and about Malaga was very good, but at Almeria the crop was injured by the overflow of the vines, so that the decrease last year over the year before (1890) was 42,126 barrels. H. F. Fisher, consular agent at Almeria, writing of the present crop under date of June 15, 1892, says:

> A short time ago there seemed to be every prospect of a very large crop this year; but unfortunately many districts in which extensive vineyards are situated have suddenly been attacked by mildew, so that the outlook is very gloomy at present, and the crop, which everybody calculated would reach about 1,200,000 barrels, may not amount to 500,000 barrels. The vineyards situated in the higher districts have fortunately not been attacked, so the number of barrels mentioned may be expected, which means a decrease of about 300,000 barrels compared with last year. The shipments to the United States may, however, be about the same.

The vines in the vicinity of Malaga look exceedingly well and bid fair to produce a good crop, and, as they are mostly of American graftings, it is a pleasure to contemplate the future grape culture of this region.

BRANDY.

An effort has been made by one of our merchants to introduce Spanish brandy into the southern section of America (New Orleans) and with some

show of success, as 50 cases were shipped for the fiscal year 1891 and 130 cases for the fiscal year 1892, being an increase of 80 cases.

IRON ORE.

The amount of iron ore exported to the United States for the fiscal year ended June 30, 1891, was 58,652 tons; for the year ended June 30, 1892, 53,303 tons, or a decrease of 5,349 tons. This ore is produced by labor at 40 and 50 cents per day and is conveyed to America at a very low rate, so that it comes in competition with our own ore and tends to depreciate the wages of our laborers.

LEMONS.

As the Malaga lemons ripen quicker than the Californian article, and as last year was very warm in the United States, there was a great demand for Spanish fruit for lemonades and for other purposes; hence there was an increase over the fiscal year of 1891 of 16,426¼ boxes.

LEAD.

The decrease in the shipment of lead has been 20,112 pigs, 23,347 pigs having been shipped for the fiscal year ended June 30, 1891, and 3,237 for the fiscal year 1892.

ORANGES.

There was no shipment of oranges at all last year and only 1,981 boxes the year before, the Italian and Californian article supplying the market.

OIL OF GERANIUM.

A new industry has sprung up here which seeks a market in the United States, that is, the distillation of oils and essences from flowers. There is a large factory here used for this purpose, and acres of geraniums and other flowers are utilized. The first shipment of the oil of geranium was made this year.

PALM-LEAF HATS.

These articles are manufactured from palms which grow in this district, and quite a trade now exists with the United States. During the fiscal year ended June 30, 1891, 1,028 bales were exported, while 1,069 bales were shipped during the fiscal year ended June 30, 1892, an increase of 41 bales. The hats are taken to New York, bleached, remodeled, and sold at a good price. The trade is increasing.

RAISINS.

Raisins go up or down with the fluctuations of grapes. If grapes fail, then there is a less shipment of raisins. The falling off of exportation in raisins last year was 30,552 boxes, only 39,904 boxes being shipped to offset over 1,000,000 boxes exported in 1884 and 70,456 boxes transported to the United States last year.

WINE.

In the early part of 1892 the shipments of wine to France were very great in anticipation of the enforcement of the French tariff law, which laid a heavy tax upon this article. For the fiscal year ended June 30, 1891, however, 28,960 gallons of wine were shipped to the United States, while for the fiscal year ended June 30, 1892, only 25,900 gallons were exported, being a decrease of 3,060 gallons for the last fiscal year.

EXPORTS TO THE UNITED STATES.

The following table shows the quantity of articles exported from the consular district of Malaga to the United States for the fiscal years ended June 30, 1891 and 1892:

Articles.	1891.	1892.	Increase.	Decrease.
Almonds.....boxes...	29,439	48,363	18,924	.....
Aniseed.....bags...	100	.....	.....	100
Beans.....do.....	527	12	.....	515
Brandy.....cases...	50	130	80	.....
Colocynth.....boxes...	80	50	.....	30
Chick-peas.....bags...	10	52	42	.....
Figs.....mats...	1,515	.....	.....	1,515
Grapes.....barrels...	256,387	204,219	.....	52,168
Iron ore.....tons...	58,652	53,303	.....	5,349
Lemons.....quarter boxes...	42,770	59,196	16,426	.....
Lead.....pigs...	23,349	3,237	.....	20,112
Oranges.....boxes...	1,981	.....	.....	1,981
Orange peel.....bales...	59	109	50	.....
Olives.....cases...	.....	125	125	.....
Olive oil.....tin cases...	310	10	.....	300
Oil of geranium.....cases...	.....	1	1	.....
Palm-leaf hats.....bales...	1,028	1,069	41	.....
Preserved articles.....cases...	.....	87	87	.....
Pomegranates.....boxes...	2,371	1,271	.....	1,100
Raisins.....do.....	70,456	39,904	.....	30,552
Red pepper.....cases...	310	338	28	.....
Rags, disinfected.....bales...	.....	9	9	.....
Rice.....bags...	.....	5	5	.....
Garlic.....bales...	.....	28	28	.....
Sundries.....cases...	43	29	.....	14
Wine.....gallons...	28,960	25,900	.....	3,060

The value of merchandise sent from this district to the United States for the fiscal year ended June 30, 1891, was $1,387,657.33; amount for the fiscal year 1892, $1,237,348.13; decrease, $150,309.20. This decrease is almost entirely owing to the loss of grapes by the destruction of the vines and the increased growth of the fruit in California.

INCREASE OF INVOICES.

Notwithstanding the vexatious obstacles to trade here, the invoices in Malaga have increased this year over last and over several preceding years. The number for 1891 was 467; for 1892, 505, an increase of 38. In the district there has been a decrease of 143 invoices.

FINANCES.

The finances of Spain are in a very disordered and deplorable condition and appear to be growing worse. The national debt is over $1,299,500,000, and there is now a deficit of $20,000,000 in the treasury. Exchange on London has been 20 per cent and upward, although it is now lower. New taxes have been levied upon women and others who sell vegetables, and the result has been riots and bloodshed, both in Madrid and near Almeria and in other parts. The fact is, it is hard to see how the people can bear any further taxation. The minister of finance seems to be aware of this fact, as he now talks of a loan of $150,000,000.

MACHINERY.

Most of the flour mills in Spain are furnished with machinery from England, France, and Germany, and the amount expended for these articles exceeds $5,000,000—indeed, close to $6,000,000. Only a few American cleaners can be found in the mills. Each year the Spaniards are induced to introduce better machinery, but this is only effected through the personal efforts of practical men from England, France, and Germany, who appear upon the ground, superintend the machinery, and demonstrate its effectiveness. Here is a wide field for American enterprise.

T. M. NEWSON,
Consul.

UNITED STATES CONSULATE,
Malaga, July 10, 1892.

STREETS AND HIGHWAYS IN THE PUNJAB.

REPORT BY CONSUL-GENERAL MERRILL, OF CALCUTTA.

Referring to my dispatch dated September 15, 1891, and to Department instruction of November 8, 1890, I have the honor to submit the annexed report on the construction and maintenance of streets and roadways in the Punjab.

SAMUEL MERRILL,
Consul-General.

UNITED STATES CONSULATE-GENERAL,
Calcutta, June 14, 1892.

PUNJAB ROADS.

[Inclosure in Consul-General Merrill's report.]

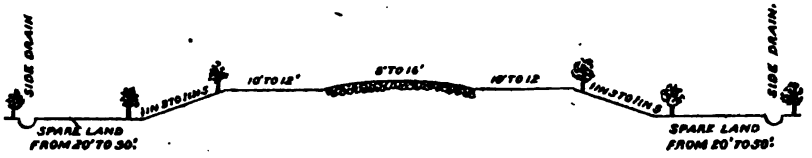
In the Punjab roads are made and maintained from one or more of the following sources of revenue: (1) Imperial, (2) provincial, (3) district or local funds, and (4) municipal.

(1) These are such roads as are made and maintained for the troops and cantonments only, or for other military purposes.

(2) Under this head are classed all kinds of trunk roads made and maintained for traffic passing through the province.

(3) District boards make and maintain such roads as are purely for the benefit of a district, and they are mostly unmetaled. They are the arteries of the main system.

(4) Municipal roads are made and maintained for the benefit of the community of a certain city within the municipal limits fixed by the government.



The control of roads designated 1 is vested in the Punjab war department, military works branch; of 2, in the Punjab war department, general branch; of 3, in local boards, called district committees, composed of members selected and nominated under the district board's act; of 4, in the municipal board, also composed of members elected and nominated under the municipal act.

Streets are understood to mean roads passing through important places of public business. Formerly they used to be paved with bricks laid on edge dry, the joints being filled in with sand. Such streets, however, are now being superseded by metaled roads. The material used for public roads in the Punjab is (1) stone, (2) kankar, (3) brick ballast.

(1) *Stone.*—This, of course, is the most durable material for roads, and of this again limestone broken into a gauge of three-fourths of an inch to 1 inch gives the best results. The duration varies from five to ten years, according to the quality of the stone and the amount of traffic.

(2) *Kankar.*—Kankar is a natural formation of calcareous deposits found over a great portion of the Punjab at a depth of 3 to 6 feet below the surface in strata varying from 1 to 3 feet in thickness. It gives a very smooth surface and is fairly lasting, according to the quality of the material, the average age being from three to six years in heavy traffic and from six to ten years in light traffic.

(3) *Brick ballast.*—This is used where no natural deposits of kankar or stone are available. It has not much duration but is comfortable when in good order.

The cost of building or maintaining such streets or roads varies considerably in different localities according to local circumstances and requirements. On the average the initial cost may be taken at 6,000 to 10,000 rupees a mile and the cost of maintenance at one-tenth of the initial cost. This is more for the civil department to answer. The figures 6,000 to 10,000 rupees would include the whole cost of road construction. "Ordinary maintenance" costs about 90 rupees per mile per annum. The renewal of metal is additional to that, according to the duration of the metal.

Generally speaking, the proximity of roads is bound to enhance the price of lands and to exercise a great civilizing influence on the habits and manners of the people.

The city streets are either paved with bricks on edge or by two coats of kankar metal over one layer of brickbats.

Brick-on-edge pavement is built of small country bricks measuring 8 inches by 5 inches by 1½ inches, twelve bricks being required for 1 superficial foot or one hundred and eight per square yard. Dry sand, or *surkhi*, is used for leveling the ground under the pavement and filling its joints. The detail of cost of 1 square yard of pavement of bricks on edge is as follows: One hundred and eight bricks, 8.64 annas; sand, or *surkhi*, 2 annas; labor, 4.32 annas; sundries, 1.04 annas; total per square yard, 1 rupee. The cost of two coats of kankar metal is as follows: Kankar, 8.5 annas; consolidating kankar, 1.6 annas; total 10.1 annas. The cost of one coat of kankar metal over one coat of brick ballast is: Kankar metal, 4.2 annas; brick, 2.6 annas; consolidation, 1.6 annas; total, 8.4 annas.

To the above figures should be added the cost of two side drains, which are made of brick-work, and the cost of which, for both sides, may be put down at 1 rupee per running foot.

The Roorkee treatise on civil engineering and the treatise on roads by Col. St. Clair Wilkins, royal (late Bombay) engineers, give very full details.

GANGA RAM, C. E.,
Executive Engineer Lahore Provincial Department.
E. HARVEY,
Superintending Engineer, Third Circle.

GERMAN IMPORTS AND EXPORTS BY COUNTRIES.

REPORT BY CONSUL-GENERAL EDWARDS, OF BERLIN.

I have the honor to transmit herewith a translation of a clipping from the Berlin Vossische Zeitung of August 9, 1892, in respect to the ratio existing in the foreign trade of Germany between the trade with individual countries and the entire trade, which I trust may prove of interest.

*Table showing the imports and exports of Germany by countries for the year 1890.**

IMPORTS.

Countries.	Value.	Per cent.
	Marks.	
Great Britain	640,500,000	15
Austria-Hungary	598,500,000	14
Russia	541,900,000	12.7
United States	405,600,000	9.5
Belgium	316,900,000	7.4
Holland	309,200,000	7.2
France	267,100,000	6.2
Switzerland	174,200,000	4.1
Italy	140,400,000	3.3
Brazil	137,700,000	3.2
British India	128,700,000	3
Argentine Republic	75,200,000	1.8
Denmark	61,900,000	1.4
Chile	61,400,000	1.4
Australasia	50,300,000	1.2
Sweden	46,100,000	1.1
Spain	34,100,000	0.8
Roumania	29,400,000	0.7
West Africa (exclusive of German protectorate)	21,400,000	0.5
Capeland	17,900,000	0.4
Portugal	11,300,000	0.3
Mexico	10,700,000	0.3
Turkey	9,600,000	0.2
Peru	5,500,000	0.1
Japan	4,700,000	0.1
Servia	4,100,000	0.1
Greece	4,000,000	0.1
All other	164,700,000	3.9
Total	4,273,000,000	100

* This statement, prepared in the Department, embraces all the information contained in the long translation from the Berlin Vossische Zeitung. It is valuable as being the first published official information of the kind concerning German foreign trade.

Table showing the imports and exports of Germany by countries for the year 1890—Cont'd.

EXPORTS.

Countries.	Value.	Per cent.
	Marks.	
Great Britain	705,300,000	20
United States	416,700,000	12.2
Austria-Hungary	351,000,000	10.3
Holland	258,000,000	7.6
France	206,500,000	6.1
Switzerland	179,600,000	5.3
Belgium	150,800,000	4.4
German free ports	104,800,000	3.1
Italy	94,700,000	2.8
Sweden	91,600,000	2.7
Denmark	76,400,000	2.2
Roumania	53,500,000	1.6
Spain	53,100,000	1.6
Brazil	52,400,000	1,5
Turkey	34,100,000	1
British India	32,200,000	0.9
Chile	30,800,000	0.9
Argentine Republic	26,100,000	0.8
Portugal	21,100,000	0.6
Japan	18,500,000	0.5
Mexico	14,300,000	0.4
Peru	8,400,000	0.2
Greece	3,700,000	0.1
West Africa (German)	3,200,000	0.1
Servia	3,100,000	0.1
Bulgaria	2,800,000	0.1
All other	417,300,000	12.9
Total	3,410,000,000	100

W. H. EDWARDS,
Consul-General.

UNITED STATES CONSULATE-GENERAL,
Berlin, August 11, 1892.

NICARAGUAN STATISTICS.

REPORT BY CONSUL NEWELL, OF MANAGUA.

THE DEPARTMENT OF MATAGALPA.

So much has been published lately about Matagalpa, Nicaragua, which was in part fiction that I feel called upon to furnish the Department with reliable data concerning that section. As this department is the Mecca for all the immigrants that come to Nicaragua, as it will soon become the coffee-producing region of this Republic, and as there are many in the United States seeking knowledge upon this subject, an unmistakable benefit will be conferred by making these facts public.

The department of Matagalpa is a three days' ride from Managua by mule or carreta. The capital of the department, Matagalpa, is a place of

some 3,000 inhabitants, of a mixed race, Spanish and Indian; it has an altitude of 2,200 feet, and lies in a valley surrounded by hills, which slope 3,000 feet above the town. The thermometer never reaches a greater degree of temperature than 70° F. at midday, the mornings and evenings being 10° cooler. A small river runs through the valley and supplies the town with an abundance of pure, wholesome water.

The winter, or rather the wet season, begins in the month of June, ending with November. Through the dry season there are frequent showers. The climate is most delightful and healthful. Some of the residents who have lived in California consider it superior to that of that State.

For fertility of soil it is unexcelled; the land will grow almost everything. Coffee, cacao, sugar cane, tobacco, corn, rice, and wheat do well without much labor expended upon them. All vegetables flourish. The tropical fruits—bananas, piñas, mangoes, etc.—are seen in luxuriant abundance. An effort on a limited scale was made to cultivate grapes, but, the proper means not being adopted, it did not succeed. Cattle-raising is another industry being carried on extensively, from which a number of fortunes have been accumulated.

However, the main industry of this department is coffee-raising. It is estimated that there are now under cultivation 5,000,000 trees. These trees are not all producing, as many of them are only one and two years old. A coffee tree does not begin to yield before its third year, and then not to its full extent; four years is supposed to be the full growth of a coffee plant. Coffee trees, at the lowest estimate, in this country yield a pound, though I am informed of instances where the trees yielded as high as 5 pounds. In two years' time at least Matagalpa will have for exportation 5,000,000 pounds, or, in other words, 25,000 tons, of coffee.

The question that concerns the inhabitants of Matagalpa is, how are they going to get their coffee to market? Now they have to transport the produce on the backs of mules or in carretas drawn by slow, sleepy oxen. A concession for a railroad through this section was granted last year, but the parties failed to carry out the project, much to the disgust of the Government and to the chagrin of the citizens of Matagalpa. It was proposed by the terms of the concession to build the road from Momotombo, a point on the western side of Lake Managua, to some point on the Rio Grande River where vessels could ascend. At Momotombo connection was to have been made with the Government line which runs to Corinto, on the Pacific side, so that there would have been a continuous road from ocean to ocean. To facilitate the building of this railroad the Nicaraguan Government gave a land grant of 1,000,000 manzanas (nearly 2,000,000 acres).

According to my mind, the advantages of this road are not correctly understood. A road tapping solely the district of Matagalpa would not pay, but one having steamer connection, by means of the Rio Grande River, with New Orleans and New York I am confident would be a financial success. Besides 25,000 tons of coffee annually to be exported, there would be thousands of bunches of bananas, as this road would tap one of the best

banana districts in Central America. Furthermore, this road would aid in the development of the mining districts of Matagalpa—Jinotega and Nuevo Segovia—for the ores from these departments would seek foreign markets over this road.

But a road from Momotombo to the Rio Grande would not have to depend only upon the transportation of coffee, bananas, and ores. By proper business tact much of the freight that finds its way to Nicaragua via the Isthmus of Panama could be diverted to this road, for the merchants here would prefer to ship direct than by the roundabout way of Panama. This road, again, should be able to control this traffic, because it would be one week nearer the United States and Europe than by the present means of communication. The time from New Orleans to the terminus on the Rio Grande ought not to be more than four days; two days would be ample time to transport the freight to the principal cities in the interior and to Corinto, on the Pacific coast. It might be important to have a line of steamers on the western coast, running as far north as Champerico, Guatemala, and as far south as Punta Arenas, Costa Rica. These steamers would enable the road to secure the carrying of the freight and produce of Guatemala, Honduras, Salvador, Nicaragua, and Costa Rica.

The amount of freight arriving at Corinto during the year 1891 was 16,930 tons, and at San Juan del Sur, the second port of Nicaragua on the Pacific side, was 1,225, making a total of importations received at these ports of 18,155 tons. The value of the importations received at San Juan del Norte during the year 1891 was $382,724.84. I have given these statistics to show the sources from which a road to Matagalpa might derive a revenue.

IMMIGRATION LAW.

In connection with this report I deem it important to cite the immigration law of Nicaragua, about which I have received numerous inquiries, and which has been misquoted and misunderstood. I also make, as part of this report, a synopsis of the law which grants a premium to the planters of coffee and other statistics governing the cultivation of coffee.

In order to induce immigration, the Republic of Nicaragua has issued a law which gives to each married immigrant 120 manzanas of land and to each unmarried immigrant 60 manzanas. A manzana is a piece of land 100 varas square, equivalent to a little less than 2 acres. The immigrant, to gain advantage of this law, must become a naturalized citizen of Nicaragua. Those persons who become citizens of Nicaragua use the public and common lands with the same rights as the natives and are exempt for ten years from municipal duties and military service, save when the liberty and sovereignty of the country is endangered. The grantee can not acquire ownership in the lands ceded under this law unless he cultivates at least one-half of it.

To those desiring to remain citizens of their own country the Government makes the same concession; but the immigrant does not acquire the

property, but only a leasehold interest, and on the same terms as those who come to the country for the purpose of becoming citizens, but who do not conform to the law in the required time. This right does not extend beyond ten years and can not be transferred by any hereditary title if the immigrant has cultivated less than one-half of the land ceded, whether the land be in the possession of the original grantee or of a third person.

In order to enjoy the privileges conceded by this law, the immigrant must secure a passport either from a minister or from a consul of Nicaragua resident in the country from which he comes.

PREMIUM FOR COFFEE-PLANTING.

For the purpose of inducing persons to cultivate coffee trees, the Government has promulgated a law which gives to each person planting coffee trees a premium of 5 cents for each tree planted when the number does not fall below 5,000 plants. Two and one-half cents of the premium is paid when the trees are two years old and the remainder when the trees begin to yield. It is claimed by those who are engaged in the cultivation of coffee that from 400 to 500 trees can be planted upon an acre of land. Coffee trees can be purchased for setting out at the rate of $5 per thousand. It is estimated that it will cost from $6 to $25 to clear a manzana of land. The amount expended for this purpose will depend largely upon the quantity of timber and undergrowth upon it. The wages of laborers on coffee plantations are 40 cents per day. It is said that 100 pounds of coffee can be produced for $5. The selling price of the same quantity for the past five years has been from $16 to $25, so that a handsome revenue is derived by those interested in this industry.

Nicaragua divides her lands into three classes: First, grazing lands, the price of which is 80 cents per manzana; second, agricultural land, the price of which is $1.50 per manzana; and, third, those lands that are watered by running streams or naturally irrigated, the price of which is $2. Should any of these lands mentioned contain timber suitable for building purposes or dyewoods, there is added to the price already named the sum of 40 cents per manzana.

Many persons who have addressed me regarding the advisability of coming to Nicaragua seemed to be possessed with the idea that very little capital, if any, was necessary in the preparation of a coffee hacienda. Under no circumstances would I advise a person to come here to become a coffee-planter with less than from $3,000 to $4,000. A person should have sufficient capital to live upon while he is waiting for his coffee trees to grow, which will be a period of four years.

BRIGHT OUTLOOK FOR NICARAGUA.

A great future is now beginning to dawn upon Nicaragua. The copious rains of this year will, I am confident, give her a greater yield of coffee than she has ever known before. The building of the canal will bring to her

shores many thousands of dollars, and many immigrants will wend their way hither to take advantage of the liberal inducements that this Government holds out.

Improvements of many kinds are being made in the country, such as the building of magnificent market buildings, edifices that would be a credit to larger and older cities. The different large cities are introducing water works, and Granada is constructing a tramway from the railroad station to the market.

A number of fine residences have been erected within the past two years, not only in Managua, but in Granada, Masaya, and Leon. The more marked improvements, however, have been in Managua.

WILLIAM NEWELL,

UNITED STATES CONSULATE, *Consul.*

Managua, July 25, 1892.

COMMERCE OF ANGOLA IN 1891.

REPORT BY COMMERCIAL AGENT CHATELAINE, OF LOANDA.

The following table shows the imports and exports of Angola for the year 1891:

Ports.	Imports.		Exports.	
	Value.	Duties.	Value.	Duties.
Loanda	$2,720,879	$529,100	$2,050,000	$67,250
Benguela	1,391,750	360,160	1,400,000	41,000
Ambriz	755,000	41,000	550,000	(*)
Mossamedes	410,000	46,000	129,000	7,100
Total	5,477,629	976,260	4,129,000	115,350

*Ambriz had no duties on exports in 1891.

These totals are exclusive of imports and exports of the Kongo district, where trade was free until the Brussels conference. There being no tariff nor custom-houses, neither were there statistics of imports or exports.

Table showing the principal articles of import.

Articles.	Loanda.	Benguela.	Ambriz.	Mossamedes.
Cotton goods	$650,000	$690,000	$270,000	$45,000
Guns	84,000	92,000	30,000	13,000
Powder	75,000	70,000	50,000	3,500
Miscellaneous hardware	350,000	150,000	100,000	100,000
Blankets	.....	50,000	.....	.....

Cotton goods and gunpowder are chiefly imported from England; guns from Belgium and France; blankets, wine, and olive oil from Portugal. Germany comes next to England in imports.

Table showing the principal articles of export.

Articles.	Loanda.	Benguela.	Ambriz.	Mossamedes.
Palm oil	$41,000			
Rubber	460,000	$1,100,000		
Coffee	1,300,000		$470,000	
Wax	72,000	145,000		
Palm kernels	35,000			
Ivory	1,750	47,000		$1,100
Cotton	4,000	3,200		22,000
Orchilla weed	9,500	8,000		
Gums	3,300			
Almeidina				2,200
Cattle				19,000

Many other articles are exported, but not in quantities worthy of mention. Rum, however, is exported from all the above ports in considerable quantities.

The almeidina mentioned above is rubber from the *Euphorbia arborescens*, which is gathered only by one trader and exported at Mossamedes alone to Portugal.

Table showing the imports from the United States.

Articles.	Loanda.	Benguela.	Ambriz.	Mossamedes.
Flour	$900	$14,000	$4,600	$3,300
Kerosene	18,000	650	850	1,900
Guns		100	4,500	
10 per cent	19,000			180
20 per cent	1,000		10	1,500
25 per cent				300

In addition to the above, Mossamedes shows $185 of implements, $65 of beer, and $190 of cotton goods, and Ambriz $10 of molasses. The total of declared American imports into Angola is therefore $71,310.

The real imports from the United States into Angola in 1891, beyond any doubt, exceeded $150,000. Most of the flour, all of the kerosene, and much of the timber, machinery, and manufactured articles used in Angola are of American origin; but, having been purchased of English, German, or Portuguese firms, they appear in the official returns as imports from those countries. I know of about $10,000 worth of agricultural machinery that was imported in 1891 from the United States via England and which does not appear in the statistics as imports from the United States.

One proof of the difference between real and declared imports is found in kerosene. It is an established fact that all of the kerosene used in Angola is of American origin, yet the declared imports mention as such only $20,400, while the total declared imports are $27,600, the difference being put down as German merchandise. The total imports of flour are $98,700, most of which, if not all, is American; yet only $22,800 are credited to the

United States. The rest is said to be imported from England or Portugal. American timber is not mentioned at all among the imports of 1891. The baggage of the three important American missions established in Angola does not find a place in the above table, although most of it is imported from the United States.

As to exports, none are mentioned as destined for the United States; but many, no doubt, find their way thither by way of England, chiefly rubber, gums, coffee, and ivory.

All the merchants of Angola are very anxious to have direct commercial relations with the United States, and there is no article of American export which could not, in limited quantities, find a market in Angola, provided there be a reliable American house in this province.

One American firm manufacturing agricultural machinery has sent out here an engineer to visit the plantations and distribute catalogues, and as a result of this step American machinery is sure to supersede the English on most plantations, in spite of the wretched means of communication and the difficulties in the exchange.

Angola is cursed with an enormous and ever-growing production of rum.

Table showing the number, tonnage, etc., of vessels entered in 1891.

Ports.	Steamers.		Sailing vessels.		Tonnage.
	Portuguese.	Foreign.	Portuguese.	Foreign.	
Loanda:					*Cu. meters.*
Men-of-war	28	16	4		27,070
Merchant	79	58	10	15	217,081
Novo Redondo (merchant)	35		2		65,066
Benguela (merchant)	55	1	8		105,370
Mossamedes:					
Men-of-war	3	6			5,969
Merchant	28	5	4	6	62,885
Ambriz:					
Men-of-war	11				2,646
Merchant	31	60			123,507
Ambrizette:					
Men-of-war	15	2			5,442
Merchant		53			54,060
St. Antonio:					
Men-of-war	37				9,016
Merchant	24	31			94,596
Landana:					
Men-of-war	14	1			4,425
Merchant		94		9	115,548
Cabinda:					
Men-of-war	41	1	2		15,792
Merchant	40	37		1	117,673
Lobito:					
Men-of-war		3	1		4,200
Merchant				1	90
Total:					
Men-of-war	149	29	7		74,560
Merchant	292	339	24	32	955,876

Table showing the number, tonnage, etc., of vessels entered in 1891—Continued.

Ports.	Horse power.	Crews.	Guns.	Passengers.	Mail bags.
Loanda:					
Men-of-war	20,380	4,545	183	167	28
Merchant	64,513	6,917	148	5,951	903
Novo Redondo (merchant)	25,470	2,411	35	186	150
Benguela (merchant)	40,073	3,985	56	735	366
Mossamedes:					
Men-of-war	5,260	909	47	1	2
Merchant	22,733	2,299	33	1,275	339
Ambriz:					
Men-of-war	920	788	24	69	5
Merchant	44,351	4,386	97	543	255
Ambrizette:					
Men-of-war	2,950	1,273	42	129	18
Merchant	21,071	1,872	57	277	47
St. Antonio:					
Men-of-war	3,040	2,430	78	140	28
Merchant	30,612	3,200	56	863	211
Landana:					
Men-of-war	1,370	1,005	35	75	10
Merchant	40,785	3,614	105	156	88
Cabinda:					
Men-of-war	4,490	3,138	96	446	75
Merchant	42,730	4,928	84	1,207	284
Lobito:					
Men-of-war	2,730	552	24	.....	.....
Merchant	.....	10	.....	.....	.....
Total:					
Men-of-war	41,140	14,190	529	1,027	166
Merchant	332,338	33,622	671	11,193	2,643

Table showing the number, tonnage, etc., of vessels cleared in 1891.

Ports.	Steamers.		Sailing vessels.		Tonnage.
	Portuguese.	Foreign.	Portuguese.	Foreign.	
Loanda:					*Cu. meters.*
Men-of-war	28	16	3	.....	26,496
Merchant	79	60	7	16	219,123
Novo Redondo (merchant)	35	.....	2	.....	65,066
Benguela (merchant)	55	1	8	1	104,856
Mossamedes:					
Men-of-war	3	6	.....	.....	5,969
Merchant	28	5	4	5	62,257
Ambriz:					
Men-of-war	11	.....	.....	.....	2,646
Merchant	31	58	.....	.....	120,501
Ambrizette:					
Men-of-war	15	2	.....	.....	5,442
Merchant	.....	53	.....	.....	54,060
St. Antonio:					
Men-of-war	37	.....	.....	.....	9,016
Merchant	24	31	.....	.....	94,596
Landana:					
Men-of-war	14	1	.....	.....	4,425
Merchant	.....	95	.....	9	116,835

Table showing the number, tonnage, etc., of vessels cleared in 1891—Continued.

Ports.	Steamers.		Sailing vessels.		Tonnage.
	Portuguese.	Foreign.	Portuguese.	Foreign.	
Cabinda:					*Cu. meters.*
Men-of-war	41	1	2		13,035
Merchant	40	38		1	121,437
Lobito:					
Men-of-war		3	1		4,200
Merchant				1	90
Total:					
Men-of-war	149	29	6		71,229
Merchant	292	341	21	33	958,821

Ports.	Horse power.	Crews.	Guns.	Passengers.	Mail bags.
Loanda:					
Men-of-war	20,390	4,466	182	144	2
Merchant	64,802	6,962	150	3,684	683
Novo Redondo (merchant)	25,470	2,411	35	1,746	138
Benguela (merchant)	40,073	3,930	56	971	278
Mossamedes:					
Men-of-war	5,260	909	47	36	1
Merchant	22,733	2,291	33	643	289
Ambriz:					
Men-of-war	920	788	24	25	1
Merchant	43,351	4,320	95	282	140
Ambrizette:					
Men-of-war	2,950	1,274	42	8	9
Merchant	21,071	1,870	57	185	33
St. Antonio:					
Men-of-war	3,040	2,433	78	164	28
Merchant	30,612	3,205	56	813	161
Landana:					
Men-of-war	1,370	1,005	35	88	11
Merchant	41,635	3,650	90	178	34
Cabinda:					
Men-of-war	4,250	3,157	101	516	72
Merchant	43,127	4,888	80	314	187
Lobito:					
Men-of-war	2,730	552	24		
Merchant		10			
Total:					
Men-of-war	40,910	14,584	533	981	124
Merchant	332,874	33,177	652	8,816	1,943

The steam navigation on the Quanza River in 1891 was as follows: Steamers entered, 23; steamers sailed, 23; passengers entered and sailed, 685.

The number of contract laborers shipped in 1891 from Angola to St. Thomas and Principe was 1,768.

The coasting trade was as follows in 1891: Total of vessels which called at fifteen ports, 3,414; total tonnage, 102,746 cubic meters.

The following table shows the export price list per kilogram for the ports of Loanda, Benguela, and Mossamedes for July, 1892, used as a basis for determining amount of export duties:

Articles.	Approximate price.	Articles.	Approximate price.
Cotton	$0.10	Gum:	
Oil:		Copal	$0.28
Palm	.06	Yellow	.20
Fish	.06	White—	
India rubber	.90	Picked	.08
Coffee	.23	Common	.04
Cotton seed	.01	Ivory:	
Wax	.45	De lei	3.60
Palm kernels	.03	Meio	2.50
Hides:		Escravelho	1.20
Dry	.08	Miudo (small)	.50
Salt	.15	Mususa root	.04
Hippo ivory	.30	Dry fish	.06
Baobab fiber	.01	Tobacco:	
Peanuts	.04	Leaf	.10
Sesame seed	.05	Prepared	.60
Tobacco	.10	Orchilla weed (dye)	.06
Smoking hemp	.30		

HELI CHATELAINE,
Commercial Agent.

UNITED STATES COMMERCIAL AGENCY,
Loanda, June 29, 1892.

MEXICAN MARITIME MOVEMENT.

TRANSMITTED BY MINISTER RYAN, OF MEXICO.

[Translation.—From the Diario Oficial of July 14, 1892.]

Table showing foreign shipping by ports in fiscal year 1890–'91.

Ports.	Entered.				Cleared.			
	Steamers.		Sailing vessels.		Steamers.		Sailing vessels.	
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
Acapulco	53	88,903	10	9,097	48	74,343	9	7,959
Altata	2	270	3	835	1	62	4	1,624
Compeachy	44	91,837	26	6,591	30	52,514	28	6,644
Coatzacoalcos	1	1,200	28	7,664	5	5,652	46	12,227
Frontera	90	193,628	22	5,737	38	66,524	25	6,370
Guaymas	2	402	11	6,130	1	194	5	3,182
Isla del Carmen	6	4,214	122	34,552	6	5,038	137	38,583
La Paz	2	1,575	4	450	.....	.....	5	2,979
Magdalena Bay	.....	.....	.....	.....	1	677	.....	.....
Manzanillo	2	1,994	2	639	2	417	2	720
Mazatlan	27	50,840	15	5,637	26	50,942	7	3,675
Progreso	190	323,668	218	16,244	199	331,031	203	16,358

Table showing foreign shipping by ports in fiscal year 1890-'91—Continued.

Ports.	Entered.				Cleared.			
	Steamers.		Sailing vessels.		Steamers.		Sailing vessels.	
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
Salina Cruz	4	3,644	6	3,760	3	3,362	5	1,865
San Blas	1	208	5	1,617	.....	.....	9	1,676
San José del Cabo	.....	.....	.....	.....	.....	.....	1	708
Santa Rosalía	2	980	15	13,062	2	362	13	11,713
Soconusco	14	19,450	3	1,369	11	15,747	3	1,727
Tampico	105	171,205	50	11,733	96	154,418	43	10,484
Todos Santos	152	49,442	6	139	139	46,834	4	85
Tonalá	5	8,858	1	1,724	4	6,715	1	1,724
Tuxpan	37	71,922	21	3,422	45	85,476	27	6,495
Veracruz	243	446,853	64	19,198	228	445,832	58	16,072
Total	982	1,531,096	632	149,600	885	1,346,140	635	152,870

Table showing domestic shipping by ports in fiscal year 1890-'91.

Ports.	Entered.				Cleared.			
	Steamers.		Sailing vessels.		Steamers.		Sailing vessels.	
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
Acapulco	37	63,223	17	904	44	76,822	18	1,402
Altata	99	24,382	37	4,326	100	24,444	34	2,993
Campeachy	105	25,398	516	16,714	108	27,231	549	17,612
Coatzacoalcos	100	25,388	24	3,046	98	22,305	15	1,219
Frontera	148	32,108	117	5,234	140	31,755	112	3,192
Guaymas	198	31,545	185	5,848	130	31,615	187	8,404
Isla del Carmen	139	33,243	228	12,071	137	30,812	208	6,652
La Paz	86	41,021	199	7,979	88	41,219	224	8,090
Magdalena Bay	1	677	.....	.....	.....	.....	.....	.....
Manzanillo	59	56,129	13	1,251	59	57,641	11	1,020
Masatlan	138	95,607	214	11,173	138	95,204	233	13,539
Progreso	201	263,904	155	8,430	188	249,967	148	10,058
Puerto Angel	24	33,232	6	72	24	33,868	8	96
Salina Cruz	24	31,950	3	654	24	30,826	2	446
San Blas	63	75,716	124	4,500	64	75,925	119	4,819
San José del Cabo	28	22,089	29	1,748	28	22,089	27	1,017
Santa Rosalía	76	9,081	187	2,202	77	9,091	192	2,789
Soconusco	14	18,120	1	361	14	18,325	1	361
Tampico	29	9,971	10	1,445	38	29,863	13	1,811
Todos Santos	51	18,412	12	336	63	19,872	11	314
Tonalá	24	32,380	.....	.....	24	32,020	.....	.....
Tuxpan	43	17,377	49	3,302	38	9,368	52	2,759
Varacruz	148	46,132	137	8,969	168	60,388	150	12,602
Total	1,765	1,007,085	2,263	100,565	1,792	1,030,650	2,314	101,195

Table showing domestic shipping by customs districts in fiscal year 1890–'91.

Customs districts.	Entered.				Cleared.			
	Steamers.		Sailing vessels.		Steamers.		Sailing vessels.	
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
Agiabampo	41	2,529	76	2,484	40	2,475	74	2,406
Alvarado	3	593	33	1,493	4	920	27	1,593
Celestum	4	839	376	8,677	4	839	365	7,473
Cozumel	2	1,600	87	1,160	2	1,600	94	1,160
Chamela	8	556	1	300	8	556	2	429
Champoton	4	152	270	4,073	2	76	252	3,150
Dos Bocas	.....	.....	37	365	.....	.....	43	392
Isla Aguada	1	38	194	3,706	1	38	194	3,709
Isla de Mujeres	2	865	156	2,777	2	865	152	2,477
Isla María Madre	.....	.....	36	2,043	.....	.....	36	2,043
Jonuta	71	3,471	54	1,215	70	3 429	54	1,215
Las Peñas	.....	.....	42	1,566	.....	.....	42	1,566
Mulegé	39	3,545	147	1,998	38	3,311	152	2,017
Nautla	5	405	57	1,663	5	405	62	2,536
Palizada	123	5,620	414	10,125	112	4,913	357	8,739
Perlhuete	2	64	167	3,963	2	64	168	4,043
Piaxtla	.....	.....	14	1,344	.....	.....	13	1,322
San Quintín	25	5,845	1	30	25	5,845	1	30
Santecomápam	.....	.....	3	41	.....	.....	2	20
Teacápam	.....	.....	5	177	.....	.....	6	140
Tecoanapa	2	3,028	13	510	2	3,028	13	510
Tlacotálpam	47	18,526	72	6,264	47	18,112	64	4,765
Tonalá	2	654	47	3,581	1	210	37	1,042
Topolobampo	.....	.....	81	1,643	.....	.....	79	1,563
Zihuatanejo	4	652	4	512	4	652	4	512
Total	385	48,982	2,386	61,710	369	47,338	2,293	54,852

Table showing foreign shipping by flag in fiscal year 1890–'91.

Flag.	Entered.				Cleared.			
	Steamers.		Sailing vessels.		Steamers.		Sailing vessels.	
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
German	64	106,281	49	18,870	50	83,100	48	19,286
Austro-Hungarian	.....	.....	1	274	.....	.....	1	274
Danish	.....	.....	14	4,263	.....	.....	14	4,111
Spanish	153	384,202	77	5,330	133	310,174	71	4,514
French	40	92,386	14	6,047	39	91,981	16	5,509
Dutch	.....	.....	.....	.....	.....	.....	1	680
English	140	193,530	76	31,101	138	191,206	73	29,366
Italian	.....	.....	3	1,127	.....	.....	3	1,168
Mexican	21	6,151	120	6,512	9	3,318	110	5,419
American	519	726,498	191	48,845	473	645,135	192	48,730
Norwegian	42	20,218	72	22,521	40	19,456	86	27,176
Russian	3	1,830	.....	.....	3	1,830	1	565
Swedish	.....	.....	15	4,710	.....	.....	19	6,072
Total	982	1,531,096	632	149,600	885	1,346,140	635	152,870

Table showing domestic shipping by flag in fiscal year 1890–'91.

Flag.	Entered.				Cleared.			
	Steamers.		Sailing vessels.		Steamers.		Sailing vessels.	
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
German	1	1,103	11	4,577	6	8,585	11	4,953
Danish	.....	.....	10	2,954	.....	.....	10	3,010
Spanish	50	119,112	27	1,560	48	114,079	24	1,653
French	.....	.....	9	3,237	.....	.....	7	2,435
Dutch	.....	.....	.....	.....	.....	.....	1	654
English	12	14,425	17	6,466	13	15,366	14	4,925
Mexican	1,576	348,771	4,492	125,225	1,585	353,136	4,464	124,934
American	482	561,851	60	11,256	499	581,318	62	9,218
Norwegian	26	9,075	19	5,766	7	3,674	11	3,263
Russian	3	1,830	.....	.....	3	1,830	.....	.....
Swedish	.....	.....	4	1,234	.....	.....	3	1,002
Total	2,150	1,056,067	4,649	162,275	2,161	1,077,988	4,607	156,047

Table showing foreign shipping by ports of issue and destination in fiscal year 1890–'91.

Ports of issue and destination.	Entered.				Cleared.			
	Steamers.		Sailing vessels.		Steamers.		Sailing vessels.	
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
Germany.								
Bremen	.....	.....	1	573	.....	.....	.....	.....
Hamburg	65	109,769	20	6,824	52	105,857	24	9,487
Total	65	109,769	21	7,397	52	105,857	24	9,487
Belgium.								
Antwerp	15	31,744	2	1,347	12	30,972	.....	.....
Brasil.								
Bahia	.....	.....	3	824	.....	.....	.....	.....
Marcabé	.....	.....	1	289	.....	.....	.....	.....
Para	.....	.....	6	1,959	.....	.....	.....	.....
Paraliba	.....	.....	1	311	.....	.....	.....	.....
Pernambuco	.....	.....	6	1,761	.....	.....	.....	.....
Natal	.....	.....	2	524	.....	.....	.....	.....
Rio Grande	.....	.....	2	492	.....	.....	.....	.....
Rio de Janeiro	.....	.....	4	1,103	.....	.....	.....	.....
Santos	.....	.....	2	535	.....	.....	.....	.....
Total	.....	.....	27	7,798	.....	.....	.....	.....
Colombia.								
Barranquilla	.....	.....	2	499	.....	.....	.....	.....
Cartagena	.....	.....	5	1,213	.....	.....	.....	.....
Colon	2	2,242	2	613	.....	.....	.....	.....
Panama	52	85,873	.....	.....	45	74,879	.....	.....
Sabanilla	.....	.....	1	428	.....	.....	.....	.....
Total	54	88,115	10	2,753	45	74,879	.....	.....
Costa Rica.								
Port Limon	1	1,142	.....	.....	.....	.....	.....	.....

Table showing foreign shipping by ports of issue and destination, etc.—Continued.

Ports of issue and destination.	Entered.				Cleared.			
	Steamers.		Sailing vessels.		Steamers.		Sailing vessels.	
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
Chile.								
Iquique					1	1,348		
Valparaiso							1	1,249
Total					1	1,348	1	1,249
China.								
Hongkong					1	1,003		
Macao	2	1,825						
Total	2	1,825			1	1,003		
Denmark.								
American possessions (St. Thomas)			5	1,512				
Ecuador.								
Punta Arenas							5	2,891
Spain.								
Barcelona	34	121,139			22	64,318	3	642
Cadiz	3	8,517					1	266
Santander	2	5,266			1	1,572		
American possessions:								
Baracoa	1	419						
Cienfuegos	1	1,172	1	235				
Habana	21	62,119	72	3,932	33	95,893	65	2,921
Matanzas	1	448			1	883		
Ponce			1	356				
Puerto Rico			2	492				
San Cristobal			1	299				
Santiago de Cuba			1	358				
African possessions (Santa Cruz de Teneriffe)			1	319				
Oceanic possessions (Marquesas Islands)							1	498
Total	63	199,080	79	5,991	57	162,666	70	4,327
United States.								
Baltimore			1	286				
Barataria Bay			1	473				
Boston					10	7,486	1	281
Brazos Santiago			1	339				
Burlington							2	146
California:								
San Diego	146	43,871	6	139	132	39,634	5	101
San Francisco	63	92,326	32	12,735	58	82,320	17	4,028
Camden					1	150		
Cayo Hueso			1	33	1	1,086		
Charleston					1	1,241		
Chester							1	539
Philadelphia	1	150						
Galveston	3	861	5	768	16	19,438	20	1,486
Key West					1	120		
Lake Charles			2	74				
Mobile	11	4,120	8	2,147	9	3,419	9	2,354
Morgan City	1	707					1	63
Norfolk	2	1,962						

Table showing foreign shipping by ports of issue and destination, etc.—Continued.

Ports of issue and destination.	Entered.				Cleared.			
	Steamers.		Sailing vessels.		Steamers.		Sailing vessels.	
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
United States—Continued.								
New Orleans	34	17,389	44	7,657	50	60,326	43	8,057
New York	362	661,157	32	9,915	336	578,420	64	18,998
Orange							1	54
Pensacola	6	781	11	6,631	12	9,885	10	5,531
Pascagoula			18	3,756	2	1,805	16	3,738
Pearlington			8	1,332			11	1,654
Portland							3	3,250
Port Townsend			1	483			4	5,052
Sabine Pass			22	1,461			2	121
Savannah							1	433
Ship Island					1	1,186	2	981
Tacoma							1	1,235
Tampa	1	428			1	181		
Vancouver							2	1,761
Wilmington					2	670		
Other ports			1	157			2	1,835
Total	630	823,752	194	48,386	633	807,367	219	62,177
France.								
Bordeaux	10	24,285	6	2,370	1	2,262		
Havre	12	32,930	3	896	14	37,237	10	3,153
Lyons			1	323				
Marseilles	3	2,952	7	1,917	1	2,217	4	1,286
St. Nazaire	11	18,429			12	21,464		
American possessions:								
Cayenne			1	347				
Fort-de-France			1	316				
Guadeloupe			4	1,365				
Martinique			4	1,358				
La Pointe-à-Pitre			2	544				
San Luis			1	273				
African possessions (Dakar)			1	278				
Total	36	78,596	31	9,987	28	63,580	14	4,439
Guatemala.								
Champerico			1	424				
San José de Guatemala							1	520
Total			1	424			1	520
Haiti.								
Puerto Principe			1	355				
Hawaii.								
Honolulu							1	648
Holland.								
Rotterdam							1	565
American possessions:								
Curaçao			1	212				
Paramaribo			1	259				
Total			2	471			1	565
Honduras.								
Puerto Cortez			2	442				
Truxillo			6	502			1	44
Total			8	944			1	44

Table showing foreign shipping by ports of issue and destination, etc.—Continued.

Ports of issue and destination.	Entered.				Cleared.			
	Steamers.		Sailing vessels.		Steamers.		Sailing vessels.	
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
England.								
Cardiff	16	21,580	15	11,952				
Falmouth							144	43,584
Glasgow	3	3,784						
Liverpool	76	152,204	15	7,306	54	96,405	9	2,857
London	4	4,864	5	2,998			15	5,491
Maryport	1	1,407						
Newcastle			6	4,856				
Newport	3	3,149	5	1,649				
Queenstown							13	4,649
Swansea			1	298				
American possessions:								
Alacranes			1	39			1	39
Antigua			1	214				
Barbados	2	713	64	18,463				
Belize	3	3,039	110	3,564			108	4,459
Bermuda			1	299				
Demerara			1	335				
Turks Island	1	352						
Jamaica			1	281				
Kingston	2	1,330	2	599				
St. Lucia	3	3,736						
Trinidad			4	1,375				
Oceanic possessions:								
Sydney			1	904				
Other ports			2	628			1	393
Total	114	196,158	235	55,760	54	96,405	291	61,472
Italy.								
Genoa					1	1,592		
Syracuse							1	1,461
Total					1	1,592	1	1,461
Nicaragua.								
Corinto							1	570
Nicaragua			1	371				
San Juan del Norte	1	444						
San Juan del Sur							1	576
Total	1	444	1	371			2	1,146
Peru.								
Callao			1	691				
Pisagua							1	1,387
Total			1	691			1	1,387
Portugal.								
Lisbon			1	358				
African possessions (Cape Verde)			1	270				
Total			2	628				
Salvador.								
Acajutla			1	288				
La Union			1	498				
Libertad	1	471			1	471		
Total	1	471	2	786	1	471		

Table showing foreign shipping by ports of issue and destination, etc.—Continued.

Ports of issue and destination.	Entered.				Cleared.			
	Steamers.		Sailing vessels.		Steamers.		Sailing vessels.	
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
Russia.								
St. Petersburg	.....	.....	.....	.....	.....	.....	1	353
Uruguay.								
Montevideo	.....	.....	2	1,610	.....	.....	.....	.....
Venezuela.								
Bolivar	.....	.....	1	251	.....	.....	.....	.....
La Guayra	.....	.....	4	1,014	.....	.....	.....	.....
Puerto Cabello	.....	.....	2	704	.....	.....	.....	.....
Total	.....	.....	7	1,969	.....	.....	.....	.....
High seas	.....	.....	1	420	.....	.....	2	704

Table showing foreign shipping by nations in fiscal year 1890–'91.

Nations.	Entered.				Cleared.			
	Steamers.		Sailing vessels.		Steamers.		Sailing vessels.	
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
Germany	65	109,769	21	7,397	52	105,857	24	9,487
Belgium	15	31,744	2	1,347	12	30,972	.....	.....
Brazil	.....	.....	27	7,798	.....	.....	.....	.....
Colombia	54	88,115	10	2,753	45	74,879	.....	.....
Costa Rica	1	1,142	.....	.....	.....	.....	.....	.....
Chile	.....	.....	.....	.....	1	1,348	1	1,249
China	2	1,825	.....	.....	1	1,003	.....	.....
Denmark	.....	.....	5	1,512	.....	.....	.....	.....
Ecuador	.....	.....	.....	.....	.....	.....	5	2,891
Spain	63	199,080	79	5,991	57	162,666	70	4,327
United States	630	823,752	194	48,386	633	807,367	219	62,177
France	36	78,596	31	9,987	28	63,580	14	4,439
Guatemala	.....	.....	1	424	.....	.....	1	520
Haiti	.....	.....	1	355	.....	.....	.....	.....
Hawaii	.....	.....	.....	.....	.....	.....	1	648
Holland	.....	.....	2	471	.....	.....	1	565
Honduras	.....	.....	8	944	.....	.....	1	44
England	114	196,158	235	55,760	54	96,405	291	61,472
Italy	.....	.....	.....	.....	1	1,592	1	1,461
Nicaragua	1	444	1	371	.....	.....	2	1,146
Peru	.....	.....	1	691	.....	.....	1	1,387
Portugal	.....	.....	2	628	.....	.....	.....	.....
Salvador	1	471	2	786	1	471	.....	.....
Russia	.....	.....	.....	.....	.....	.....	1	353
Uruguay	.....	.....	2	1,610	.....	.....	.....	.....
Venezuela	.....	.....	7	1,969	.....	.....	.....	.....
High seas	.....	.....	1	420	.....	.....	2	704
Total	982	1,531,096	632	149,600	885	1,346,140	635	152,870

Table showing résumé of foreign shipping in fiscal year 1890–'91.

Ports.	Entered.				Cleared.			
	Steamers.		Sailing vessels.		Steamers.		Sailing vessels.	
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
European	258	542,019	90	44,895	170	364,296	227	74,187
Asiatic	2	1,825	.....	.....	1	1,003	.....	.....
African	.....	.....	3	867	.....	.....	.....	.....
American	722	987,252	537	103,114	714	980,841	404	76,833
Oceanic	.....	.....	1	904	.....	.....	2	1,146
High seas	.....	.....	1	420	.....	.....	2	704
Total	982	1,531,096	632	149,600	885	1,346,140	635	152,870

Table showing general résumé of the maritime movement in fiscal year 1890–'91.

Description.	Entered.				Cleared.			
	Steamers.		Sailing vessels.		Steamers.		Sailing vessels.	
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
Foreign	982	1,531,096	632	149,600	885	1,346,140	635	152,870
Domestic	2,150	1,056,067	4,649	162,275	2,161	1,077,988	4,607	156,047
Total	3,132	2,587,163	5,281	311,875	3,046	2,424,128	5,242	308,917

Comparative table of the maritime movement in the ports of the Republic during the fiscal years 1889–'90 and 1890–'91.

Year.	Entered.				Cleared.			
	Steamers.		Sailing vessels.		Steamers.		Sailing vessels.	
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
1890–'91	3,132	2,587,163	5,281	311,875	3,046	2,424,128	5,242	308,917
1889–'90	2,811	2,112,696	5,351	326,314	2,766	1,997,068	5,347	316,488
Increase	321	474,467	.....	.....	280	427,060	.....	.....
Decrease	.....	.....	70	14,439	.....	.....	105	7,571

AFFAIRS AT ST. HELENA.

REPORT BY CONSUL COFFIN.

The condition of this island has not improved since my last annual report. The revenue of the island during the year ended December 31, 1891, has fallen about $7,500. The emigration has not been as large as the previous year, but every steamer bound to South Africa carries away a few, mostly female servants, cooks, and mechanics.

An attempt is being made to make St. Helena a coaling station for freight and passenger steamers bound around the Cape of Good Hope. A

new crane has been imported, which will be erected to give them every facility for dispatch in coaling.

During the past year the American cooked pressed corned beef, which has always been served out as part of the rations to the soldiers stationed here, has disappeared from the rations served out to the garrison and Australian cooked pressed corned beef has been substituted in place thereof.

The prices of provisions during the year have been as follows: Beef, $15 per barrel; pork, $20 per barrel; bread, 6 cents per pound; American flour in barrels, $7; Australian flour in sacks of 200 pounds, $8.25 in the early part of the year, but, owing to there being a short supply on the island, the price increased to $10 for both grades; lard, 11 cents per pound in cases or barrels; American pine lumber, $40 per 1,000 feet; American cypress lumber, $50 per 1,000 feet; kerosene oil in cases of 10 gallons, $2.50; high tests, $3 per case; American granulated sugar in barrels, 6 cents per pound; common brown sugar in sacks, 4 cents per pound.

The colonial government has imported the American cypress lumber on trial, and it has been found impregnable to the white ant, and it is now imported from the United States by the colonial government to take the place of teak in building and repairing.

The whaling fleets recruited at this port in September and again in March.

The schooner *Lottie Beard*, of New Bedford, with supplies for the whalers and general cargo for the island, made her semiannual trips during the year.

JAMES B. COFFIN,

UNITED STATES CONSULATE, *Consul.*

St. Helena, June 30, 1892.

JOHORE TEA.

REPORT BY CONSUL WILDMAN, OF SINGAPORE.

Just across the famous old Straits of Malacca is the Sultanate of Johore, the only independent Malay Kingdom on the peninsula. Under the wise and humane rule of its enlightened prince Johore has kept along abreast of the more stirring English civilization of Singapore, and its 15,000 square miles is under as good cultivation as any part of the English colony and its 200,000 inhabitants as loyal and patriotic as their neighboring Europeans.

The Sultan, in his work of building up his country, has gone outside the natural products of the soil and has experimented with staple productions that are native to other sections. In coffee, pepper, and tea his experiments have proven so far successful that to-day they comprise the chief output of his little Kingdom, outstripping in value the native products of the soil—sago, tapioca, cocoa, pineapple, gambier, spices, and gums. Especially in regard to tea has the soil proved efficacious, giving it a delicious odor and flavor that to the taste of many connoisseurs places it ahead of the original Assam or the now famous Ceylon.

As the Sultan will, through my solicitation, send an exhibit of Johore tea to the Chicago Exposition, I have thought that a description of its

growth and quality might be of interest to the lovers of good tea in the United States.

I am indebted to Dato (Lord) Walter F. Garland, M. I. C. E., commissioner of public works in the Government of the Sultan, for aid in the compilation of this report. To Dato Garland's untiring energy and practical knowledge of the tea plant Johore is under great obligations for its successful culture. I would refer interested parties to him for any further information that they may desire.

The Michaelstowe tea gardens in the Sultan of Johore's territory have an area of 800 acres, of which 165 acres are under cultivation. It is most conveniently situated on the River Scudie, 25 miles from Singapore by water and 8 miles by road from Johore. It is planted with Assam hybrid, which, in this steamy climate, "flushes" all the year round. The leaves plucked are the young shoots, the bud and the too small leaves next to it only being pinched. As these are picked off, fresh shoots are thrown out and in about eight days are ready for plucking. These young shoots are called "flushes," and on the average each bush flushes three times a month. In about a year the bush flowers and must be pruned, *i. e.*, the shoots are cut back, which stops the picking for six weeks or so, but gives time for the bush to increase in size and flushing power. The tea tree has been known to bear for forty years.

In Johore no crop was picked until five years old, but this was due to difficulties in starting a new industry in a foreign country. Planting was commenced in 1882, when labor was difficult to find and expensive to keep; now, in 1892, thanks to the wise government of the State by its enlightened ruler, labor is cheap and plentiful. Coolies in these gardens receive 18 cents in Mexican silver per diem for every day they work (or, at present exchange, say 12 cents in American money). The whole garden has to be dug over three times a year, and, with manure once in three, years is capable of producing an all-round average of 500 pounds per acre.

The bushes are planted 5 feet apart in rows also 5 feet apart. They grow and flush well on these low-country lands and produce teas remarkable for their strength, which are greatly in favor both in Australia and London, fetching equal prices in the open market with Ceylon teas grown at the same elevation.

Chinese, Javanese, and Malayan laborers are employed, and it is found that the most rapid and skillful pluckers are the women and children.

The teas are, owing to their strength, used by the trade for blending with China teas; they are also excellent drinking teas, but must be freshly made as an infusion, not a decoction. Boiling water poured on the leaf should be allowed to stand for four minutes, then the liquor poured off into another vessel, and the leaf thrown away; if nice tea be wanted fresh leaf must be used.

Every morning, with the exception of Friday (the Mohammedan Sunday), men, women, and children are called out at daybreak by a horn to pluck

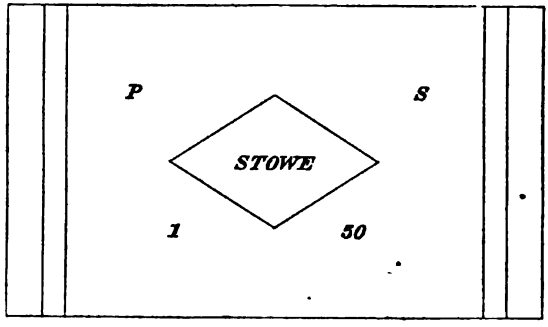
the young leaves. At 11 a. m. the horn is again the signal for their return to the factory to have their morning's pluckings weighed in by the manager.

Pluckers are paid at a fixed rate per pound of green leaf. Each basket of leaf, as it is handed in, is weighed by the mandore, the weight of the basket deducted, and a ticket for the balance handed over. At 1 p. m. the horn calls them out again, and a similar weighing operation takes place at 5 p. m., excepting only that the morning tickets are called in and the total pluckings for the day put against the name of each plucker in the check roll. With a good flush of leaf on the bushes a smart plucker can pick 60 pounds of leaf in a day.

The green leaf thus received into the factory is then handed over to a set of Chinese coolies (also on contract), who have to turn it into "made tea." First, all the leaves are sprinkled over bamboo trays and placed on stands in the upper floor of the factory under cover in order to "wither." The leaf must be handled as little as possible. Second, when the leaves are sufficiently withered, which is known by touch and color and the time it takes, depending very much upon the state of the weather (wet or dry), they are put into a "rolling" machine (in this case a hand roller, in large factories steam or water power is used), the box of which holds a charge of 50 pounds. The box is so constructed that when in motion sliding over a woolen platform it thoroughly presses, twists, and rolls the leaf without losing the juice. A charge takes about an hour to properly roll, when it is ready for the third stage, which is fermentation. The "roll" or mass of leaf as withdrawn from the roller is pressed into a heap upon a low table and turned over repeatedly by hand until the whole mass changes from its previous yellowish green to a bright coppery color, which takes place in about an hour. Fourth, the fermented roll is spread over wire-gauze trays and placed in the "sirocco," which is a large iron chest over a furnace. The temperature of the air in this chest is raised to 260° F. There are four trays which slide into the chest at different levels; the topmost tray filled with the roll is put in first and after five minutes is withdrawn, turned over by hand, and placed on the second shelf, a newly filled tray taking its place on the top shelf, and so on until the first tray has passed through the four sides, when it has become "made tea," the whole operation taking from twenty to twenty-five minutes. About 100 pounds can be manipulated in an hour.

Sorting into grades is the fifth stage. The unassorted teas are fed into a machine consisting of two long cylinders composed of wire mesh of different degrees of fineness. As the cylinders are made to revolve by turning the handle the tea works down the top horizontal cylinder, dropping out through the meshes according to size, and finally falls into the bottom horizontal cylinder and out at its further end. The finest mesh, of course, gives the best tea, the lower cylinder being the coarsest. The grades are (1) broken orange pekoe, (2) orange pekoe, (3) broken pekoe, (4) pekoe, (5) pekoe souchong, (6) souchong. About 40 per cent of the tea made turns out pekoes, the balance souchongs.

The sixth and last stage comprises: (1) Weighing the different grades, upon which weight the factory coolies are paid at a fixed rate per pound (about 4¼ pounds of green leaf make 1 pound of manufactured tea); (2) tasting to detect burnt, badly rolled, under or over fermented teas); (3) filling into wooden chests lined with lead and soldering down, each holding about 50 pounds on the average, before which the tea has to be passed through the sirocco quickly once again, in order to expel all moisture before packing, an operation which is known as "final firing;" (4) marking the chests with the description of tea, weight, and garden mark, thus—



Stowe standing for "Michaelstowe," the name of the garden, in a diamond mark; P. S. stands for pekoe souchong; 1, the number of the chest, is the "break" of tea to be shipped, 50 the number of pounds in the chest. The chests are bound with rattan split into and nailed in two bands round the chests. They are then entered in the dispatch book with their proper gross and net weights, taken to the river and dispatched to Singapore by Chinese junks, thence transshipped to ocean steamers for Australia and London.

ROUNSEVELLE WILDMAN,
Consul.

UNITED STATES CONSULATE,
Singapore, June 18, 1892.

FOOD PRICES IN EUROPEAN CITIES.

REPORT BY CONSUL BOWEN, OF BARCELONA.

I have the honor to transmit the following carefully prepared report showing the prices of the necessaries of life in the principal cities of Europe. I regret that I have not time to reduce the price equivalent to American money, but, as the Spanish peseta is of the same value as the franc (19.3 cents in American money), the reader will have little trouble in appreciating the values. For all purposes, as far as this table is concerned, the Spanish centavo may be estimated at one-fifth of an American cent, although it is a small fraction less. The peseta is equal to 19.3 cents, and there are 100 centavos in the peseta. The equivalents for the weights and measures are given in a note at the foot of the table.

Table showing the prices of food in some of the principal cities.

Cities.	Bread per kilogram.	Milk per liter.	Butter per kilogram.	Beef per kilogram.	
				First quality.	Second quality.
	Centavos.	*Centavos.*	*Pesetas.*	*Pesetas.*	*Pesetas.*
Milan	48	25	3.00	1.70	1.10
Brussels	30	24	2.65	3.00	2.25
Lisbon	50	55	5.50	2.20	1.50
Lyons	39	20	2.60	1.70	1.50
Berlin	50	25	3.25	2.50	1.80
Christiania	35	22	3.20	1.30	1.00
Buda-Pesth	32	23	2.32	1.95	1.38
Bordeaux	40	25	3.90	2.50	2.20
Munich	47½	25	2.65	2.25	2.00
Stockholm	45	17	3.00	1.05	.70
Berne	40	18	2.40	1.80	1.65
Trieste	40	34	2.45	1.45	1.15
Stuttgart	37½	20	2.75	1.90	1.62
Moscow	60	25	3.75	1.50	1.20
Rome	42	40	3.60	1.93	1.80
Constantinople	37	40	3.00	1.00	.80
Marseilles	42	35	4.00	3.00	2.10
London	37	45	3.70	2.75	1.75
New York	50	50	4.00	1.75	.88
Hamburg	42	25	2.00	3.75	1.60
Barcelona	45	50	4.50	2.50	1.85
Glasgow	31½	25	4.00	2.43	1.50
Geneva	40	20	2.75	2.15	1.45
Vienna	58	29	3.30	2.10	1.60
Paris	40	40	4.00	2.20	1.90
St. Petersburg	78	60	5.00	1.60	1.30
Naples	45	40	4.00	2.40	1.80
Nice	40	40	3.50	3.00	1.80
Madrid	42	80	3.50	2.50	2.00

Cities.	Mutton per kilogram.		Ham per kilogram.	Sugar per kilogram.	Candles per kilogram.
	First quality.	Second quality.			
	Pesetas.	*Pesetas.*	*Pesetas.*	*Pesetas.*	*Pesetas.*
Milan	1.50	1.30	5.00	1.60	1.50
Brussels	2.80	2.25	2.70	.97	1.50
Lisbon	1.40	.....	2.20	1.50	2.50
Lyons	1.70	1.60	1.60	.....	1.50
Berlin	2.50	2.00	4.00	1.00	2.10
Christiania	1.40	1.20	1.00	1.00	1.80
Buda-Pesth	1.13	.98	1.85	.85	1.80
Bordeaux	2.60	2.20	2.40	1.15	2.20
Munich	1.65	1.50	3.00	.96	1.85
Stockholm	1.05	.35	2.45	1.05	1.48
Berne	2.00	1.80	2.20	.62	1.70
Trieste	1.20	.....	2.55	.90	1.24
Stuttgart	1.60	1.60	2.50	.80	1.38
Moscow	1.20	1.00	1.60	1.00	1.75
Rome	2.10	1.60	3.90	1.60	1.75
Constantinople	1.20	.90	1.15	.55	1.50
Marseilles	2.50	1.50	3.15	1.10	2.00
London	2.75	1.75	2.60	.64	2.00
New York	1.35	.88	1.75	.50	2.75

Table showing the prices of food in some of the principal cities—Continued.

Cities.	Mutton per kilogram.		Ham per kilogram.	Sugar per kilogram.	Candles per kilogram.
	First quality.	Second quality.			
	Pesetas.	*Pesetas.*	*Pesetas.*	*Pesetas.*	*Pesetas.*
Hamburg	3.75	1.60	3.50	1.10	2.25
Barcelona	2.50	1.90	5.00	1.20	1.90
Glasgow	2.31	1.72	3.34	.57	.....
Geneva	2.15	1.85	3.20	.55	1.60
Vienna	1.40	.92	1.05	1.05	1.00
Paris	2.50	2.00	3.00	1.20	2.50
St. Petersburg	1.60	.....	1.70	1.50	1.20
Naples	1.50	1.20	1.80	1.60	1.50
Nice	2.00	1.60	3.00	1.20	2.20
Madrid	2.50	2.00	3.50	1.80	2.00

Cities.	Petroleum per liter.	Bean coffee per kilogram.	Coal per ton.	Beer per hectoliter.	Potatoes per 100 kilograms.
	Centavos.	*Pesetas.*	*Pesetas.*	*Pesetas.*	*Pesetas.*
Milan	65	4.80	.....	.....	16.00
Brussels	17	2.05	25.00	15.00	8.00
Lisbon	55	4.00	40.00	.....	13.00
Lyons	45	.....	27.00	38.00	6.00
Berlin	30	5.00	30.00	25.00	9.00
Christiania	25	4.25	25.00	35.00	13.00
Buda-Pesth	37	4.04	28.50	43.60	5.35
Bordeaux	46	2.80	26.00	30.00	12.00
Munich	27	3.50	31.00	31.00	9.00
Stockholm	25	2.50	28.00	42.00	7.00
Berne	20	2.50	43.00	25.00	8.00
Trieste	32	3.30	27.60	40.00	10.60
Stuttgart	26	2.12	39.00	26.25	11.35
Moscow	20	5.00	45.00	25.00	6.00
Rome	60	5.40	36.00	30.00	10.00
Constantinople	23	2.50	41.00	30.00	17.00
Marseilles	45	4.50	40.00	25.00	12.00
London	22	4.50	30.00	27.50	22.00
New York	20	1.20	27.50	42.00	17.35
Hamburg	25	5.00	21.25	45.00	15.00
Barcelona	60	5.50	40.00	25.00	15.00
Glasgow	13	4.40	20.00	55.00	13.00
Geneva	25	2.80	50.00	32.00	9.00
Vienna	46	3.00	36.50	51.70	10.60
Paris	55	5.40	50.00	30.00	11.75
St. Petersburg	20	4.20	55.00	52.00	.....
Naples	60	5.00	35.00	60.00	10.00
Nice	50	6.00	45.00	50.00	12.00
Madrid	80	5.00	58.00	50.00	15.00

NOTE.—The weights and measures in the above table, reduced to American equivalents, are as follows: A kilogram = 2.205 pounds; 1 liter = 2.113 pints; 1 hectoliter = 26.417 gallons.

HERBERT W. BOWEN,
Consul.

UNITED STATES CONSULATE,
Barcelona, July 19, 1892.

AFFAIRS IN MATAMOROS.

REPORT BY CONSUL RICHARDSON.

HEALTH AND TEMPERATURE.

The quarter ended June 30, 1892, has been one of unusual healthfulness and more than usual heat and lack of moisture. There have been 82 deaths in an estimated population of 12,000, which, compared with the number (130) for the quarter ended June 30, 1891, indicates greater healthfulness. The mean temperature per month for the quarter ended June 30, 1892, is indicated by the following table, together with the amount of rainfall:

Month.	Mean temperature.	Rainfall.
	Degrees.	*Inches.*
April	76.5	0.14
May	79	0.06
June	82.5	0.09
Total		0.29

EFFECTS OF THE CONTINUED DROUGHT.

I regret to report that there has been no break in the drought that has prevailed here so long. There have been a few light showers, but not heavy enough to relieve the situation. The condition of things is indescribable. The reports from up the river and back for miles on either side indicate a terrible state of affairs. No water, no grass, crops entirely burned up, cattle dying everywhere, no money, and people starving. It is but little better here. It is almost impossible to supply the table. There are no vegetables or fruit. The figs and grapes, usually so fine, are all we have, and they are inferior. The meat at any other time would not be considered proper for the table. In a few instances, where irrigation has been faithfully attended to and there has been constant cultivation, the crop has been saved. During the past quarter $36,000 (Mexican) have been expended for corn for this consular district. It retails at 2½ cents per pound. For two years the importations of corn have been heavy. The effect of the exportation of so much money from a poor people for one of the staple products of the country, together with the extraordinary depreciation of money, can scarcely be imagined. From July 1 to September 1 corn will be admitted free of duty.

The only means of support left to many families is the delicate linen drawn work, in which Mexican women are so skillful. Their only market is in the United States. The tariff is 60 per cent. There is so little profit after duty is paid that there is no demand for the work. Many are driven to smuggling.

The digest of invoice, when the difference in exchange is taken into consideration, shows no real falling off in exports, and this is remarkable. In

my report one year ago I indicated my belief that trade at this place had touched bottom; that the value of imports and exports would increase rather than decrease. This seemed clear from the improbability of longer continuation of the drought or further depreciation of silver and the reasonable expectation of railroad construction. But the drought continues, railroads are as far away as ever, and exchange was quoted at the Brownsville National Bank on July 7 at 50 per cent, while exports remain the same.

This long-continued drought and depression is not without its good effects. The business men of the different cities of the frontier are organizing for relief and development. Possible industries, irrigation, and transportation are being discussed in public meetings and the public press with a view to some action.

Salt is found in this State in inexhaustible quantities. It has already been brought into Matamoros, and two shipments have been made to Tuxpan the past quarter. Others will follow. Several attempts will be made the coming year to irrigate by horse power from the river.

There is as much talk of railroad construction as ever. This time it is the Matamoros, Linares, and Matchuala line that seems to give the most assurance.

JOHN B. RICHARDSON,
Consul.

UNITED STATES CONSULATE,
Matamoros, July 18, 1892.

VERACRUZ AND NUEVO LAREDO CUSTOMS STATISTICS.

REPORT BY CONSUL-GENERAL SUTTON, OF NUEVO LAREDO.

VERACRUZ.

For the fiscal year ended June 30, 1892, the receipts and expenditures were as follows:

RECEIPTS.

Balance from previous year		$82,808.41
Import duties	$11,143,551.69	
Balance of all kinds from previous years	590,548.98	
Tonnage dues	6,999.84	
Light-house dues	13,929.50	
Export duties on native woods	11,405.22	
Smelting, assay, etc., duties	3,386.81	
Fines	636.69	
Short-time loans	1,684,900.00	
Confiscations and fines	79,766.24	
2 per cent for hospitals	1,637.91	
Deposits	46,573.64	
General treasury	135.88	
2 per cent additional for port works	234,623.49	
Maritime and frontier custom-houses	49.38	
		13,818,145.27
Total		13,900,953.68

EXPENSES OF ADMINISTRATION.

Salaries of custom-house officers	$88,492.54	
Salaries of resguardo officers	71,746.81	
Salaries of boats' crews	5,331.35	
Subports:		
Alvarado	6,757.76	
Tlacotálpam	5,950.77	
Santecomápam	2,827.61	
Nautla	4,189.74	
Custom-house expenses	9,113.34	
		$194,409.92
Total net income		13,706,543.76

EXPENDITURES.

Light-houses	8,676.76	
Railway construction certificates	1,048,295.00	
Import duties	4,415.34	
Old charges, previous years	3,896.36	
Short-time loans	1,737,828.59	
Confiscations and fines	85,486.32	
2 per cent for hospitals	1,750.54	
Deposits	15,287.65	
General, common, and extraordinary expenses	4,626.73	
Municipality of the port	146,537.29	
20 per cent certificates, decree of April 2, 1888	1,707,830.00	
2 per cent additional for port works	234,602.66	
12 per cent certificates, decree of September 17, 1890	1,400,050.00	
Oaxaca Railway subvention certificates	171,720.00	
Fines	25.48	
National treasury	6,486,563.40	
Provisional receipts in lieu of 20 per cent certificates	627,660.00	
Duties due from railway companies and set off against subvention account	7,802.13	
Smelting, coinage, and assay duties	116.00	
		13,693,170.25
Balance carried over to July 1, 1892		13,373.51

Table showing the expenses of administration, in detail, for the fiscal year ended June 30, 1892.

Description.	Salary.	
	Per diem.	Total for year.
Veracruz custom-house:		
1 administrator	$13.70	$5,000.50
1 auditor	10.96	4,000.40
1 first officer	6.85	2,500.25
1 second officer	6.31	2,303.15
1 third officer	5.48	2,000.20
1 fourth officer	4.11	1,500.15
1 fifth officer	3.57	1,303.05
6 officers (sixth, seventh, eighth, ninth, tenth, and eleventh)	3.02	6,613.80
3 officers (twelfth, thirteenth, and fourteenth)	2.74	3,000.30
1 treasurer	8.22	3,000.30
1 bookkeeper	5.48	2,000.20

Table showing the expenses of administration, etc.—Continued.

Description.	Salary.	
	Per diem.	Total for year.
Veracruz custom-house—Continued.		
8 inspectors	$9.59	$28,008.80
1 accountant	4.94	1,803.10
1 secretary	6.58	2,401.70
1 chief of section, railway wharf	4.94	1,803.10
1 librarian	3.29	1,200.85
1 writer, assistant to above	1.65	602.25
18 writers, first class	2.20	14,454.00
12 writers, second class	1.65	7,227.00
1 warehouse keeper	5.48	2,000.20
1 warehouse keeper, wharf	5.48	2,000.20
1 money-counter	1.98	722.70
1 porter	1.65	602.25
2 servants	.83	605.90
1 first commander of guards	9.59	3,500.35
1 second commander of guards	8.22	3,000.30
5 chiefs	3.29	6,004.00
40 guards	2.74	40,000.00
1 mounted chief	4.11	1,500.15
15 mounted guards	3.29	18,012.75
4 storekeepers	1.48	2,160.80
2 storekeepers, railway station	1.48	1,080.40
2 cockswains	1.37	1,000.10
12 oarsmen	.99	4,336.20
Total		177,247.65
Subport of Santecomápam:		
1 chief	2.20	803.00
4 guards	1.65	2,409.00
Total		3,212.00
Subport of Alvarado:		
1 chief	3.29	1,200.85
1 writer, deputy	2.20	803.00
5 guards	1.98	3,613.50
1 cockswain	.83	302.95
4 oarsmen	.69	1,007.40
Total		6,927.70
Subport of Tlacotálpam:		
1 chief	3.29	1,200.85
1 writer, deputy	2.20	803.00
5 guards	1.98	3,613.50
2 oarsmen	.69	503.70
Total		6,121.05
Subport of Nautla:		
1 chief	2.20	803.00
1 cockswain	1.10	401.50
3 guards	1.65	1,806.75
4 oarsmen	.83	1,211.80
Total		4,223.05
Grand total		197,731.45

Office expenses are appropriated in bulk and distributed according to the needs of the different offices. The total for all offices for the year was $50,000.

NUEVO LAREDO.

The receipts and expenditures for the fiscal year ended June 30, 1892, were as follows:

RECEIPTS.

Import duties	$1,836,472.94	
Balances of all kinds from previous years	32,349.77	
Smelting, assay, etc., duties	6,025.30	
Confiscations and fines	9,114.60	
Short-time loans	62,000.00	
2 per cent additional for port works	36,808.69	
2 per cent additional for goods wired and sealed, order 87	35.20	
Deposits	1,956.11	
General treasury	21.31	
Employés	7.80	
Other receipts	19,341.61	
		$2,004,132.33

EXPENSES OF ADMINISTRATION.

Salaries of employés	69,250.70	
Expenses	2,000.00	
		71,250.70
Net balance		1,932,881.63

EXPENDITURES.

Treasury department		62,139.21
Fines and confiscations:		
Distributed	2,248.85	
Remitted	496.31	
		2,745.16
20 per cent certificates, decree of April 2, 1888		307,570.00
Provisional receipts in lieu of 20 per cent certificates		5,132.88
Certificates of railway construction:		
Mexican National, 6 per cent	93,810.56	
Interoceanic, 3 per cent	46,905.12	
Puebla and Oaxaca, 2 per cent	23,219.82	
		163,935.50
Duties due from railway companies and set off against subvention account:		
Southern	563.88	
Interoceanic	4,111.72	
Monterey and Mexican Gulf	5,027.61	
Mexican National	65,967.44	
		75,670.65
12 per cent certificates, decree of September 17, 1890		176,610.00
Provisional receipts in lieu of 12 per cent certificates		11,011.16
General, common, and extraordinary expenses		175.03
Premium and exchange		3,418.13
Balances to previous years		3,682.36
Burial of employés		418.17

Confiscation and fines:		
Remitted	$2,466.32	
Distributed	5,135.97	
		$7,602.29
Importation duties		2,778.01
2 per cent additional for port works		55.98
Short-time loans		62,000.00
Municipality of the port		26,973.61
Salaries of employés		101.78
National treasury		1,020,861.71
Total expenditures		1,932,881.63
Year ended June 30, 1891, omitting balances from previous years		1,863.594.54
Year ended June 30, 1892, omitting balances from previous years		2,004,132.33
Net increase		140,537.79

Table showing the expenses of administration, in detail, for the fiscal year ended June 30, 1892.

Description.	Salary.	
	Per diem.	Total for year.
1 administrator	$13.70	$5,000.50
1 auditor	9.59	3,500.35
1 first officer	6.58	2,401.70
1 second officer	5.48	2,000.20
1 third officer	4.11	1,500.15
3 officers (fourth, fifth, and sixth)	3.29	3,602.55
1 correspondence clerk	3.29	1,200.85
12 writers	1.92	8,409.60
3 inspectors	8.22	9,000.90
1 treasurer	6.58	2,401.70
1 warehouse-keeper	5.48	2,000.20
1 assistant warehouse-keeper	2.74	1,000.10
1 porter, money-counter	1.65	602.25
2 servants	.83	605.90
1 commander of guards	8.22	3,000.30
1 second commander of guards	5.48	2,000.20
2 chiefs	3.29	2,401.70
20 guards	2.74	20,002.00
1 female guard	1.00	365.00
8 guards at ferries, etc	1.65	4,018.00
Total		75,814.15

WARNER P. SUTTON,
Consul-General.

UNITED STATES CONSULATE-GENERAL,
Nuevo Laredo, August 13, 1892.

THE EXTENSION OF CHINESE TRADE.

REPORT BY CONSUL FOWLER, OF NINGPO.

I have the honor to inclose herewith a translation from the Shen Pao of the prize essay of the Chinese Polytechnic Institute for this year. The theme was given by the taotai of Chefoo, who is himself largely interested in mercantile pursuits, being the manager of the Chinese Telegraph Company and a director of a steamship company.

The essay is interesting if only as showing how and to what influence the Chinese attribute Great Britain's commercial supremacy in China.

JOHN FOWLER,
Consul.

UNITED STATES CONSULATE,
Ningpo, July 13, 1892.

THE BALANCE OF TRADE.

[Inclosure in Consul Fowler's report.—Translation.]

SUBJECT.

According to the annual returns of the Chinese imperial maritime customs of those nations that had trade relations with China in 1890 the sum of 60,800,000 taels represented the balance in favor of England, while 800,000 to 900,000 taels represented the balance of trade against Russia and the United States.

The foregoing balance of trade in favor of England and against Russia and the United States may be noted in the customs returns of several preceding years. Explain whether the above commercial phenomenon is due to the natural resources or to superior commercial and industrial capacities of the respective countries; also suggest the *modus operandi* best calculated to foster and extend trade in China.

ESSAY.

The commercial status of a nation does not depend upon its natural productions, but to the industrial and business capacity of its people; for, in spite of the scarcity of a nation's natural resources, if the people be skilled in manufactures, raw materials from other countries can be employed and converted into useful articles by skilled labor and the latter exported with profit to those very countries which produced them.

On the other hand, the natural resources of a country may be very great, but; in the absence of mechanical appliances and skillful labor, much raw material is actually wasted and the rest not turned to the best account, and proportionately little benefit is derived.

Both Europe and the United States pay the greatest attention to trade, and we perceive that in the case of those nations that maintain trade relations with China the balance of trade is invariably in favor of England and against Russia and the United States.

The reason for the above is not far to seek. Both the United States and Russia can not cope with England in her manufactures; for, while both the former, for industrial causes, must import much more than they export, the latter, with all her energies directed to manufacture, can export her wares to other countries in exchange for silver and gold, which goes to enrich her population, as her importations are always less than her exportations.

Some people contend that England owes her prosperity to her great colonial possessions with their immense natural resources. Such assertions can only be made by persons who are ignorant of the fact that of the raw material used in her manufactures only a small proportion is produced in her own dominion, as take cotton for instance. England was the first European nation to employ machinery in ginning and spinning cotton. The invention gave a tremendous impetus to cotton manufacture with its attendant profit, so that in 1868 there were 2,470 cotton mills with 400,000 looms and 32,000,000 spindles in operation in England. Additions to this number are being constantly made. During the same year (1868) cotton cloth and yarn were exported to the amount of $521,230,080 in gold, without counting the home consumption.

The raw cotton used was furnished by the United States, but English ships received the freight from the United States to England; the wages for its manufacture were received by English laborers; English mill-owners also made their profit; in the final export to foreign countries the carrying trade was almost entirely in the hands of the English, while the Government revenue on cotton alone amounted to $21,000,000. It will be seen from the above that, although the United States produced the cotton, yet England derived the most benefit and may be cited as an instance to show England's prosperity by her industrial capacity. English exports may be divided as follows: Cotton manufactures, 40 per cent; woolen, flax, and silk manufactures, 20 per cent; and the other 40 per cent consists of general merchandise. We see that, in spite of having to buy her raw material, England stands at the head of other nations in wealth by her manufactures. On the other hand, it is to be greatly deprecated that China does not pay sufficient attention to manufacture, and consequently she labors under a disadvantage in her commercial relations.

It is now some half a century since China has had trade relations with foreign countries, and, while the latter have derived great benefit from the commercial intercourse, the good that has accrued to the former is rather problematical, while the harm has been and is only too palpable (the introduction of opium). Oh, that another Liu Yen (a prodigy of the Tang dynasty) might appear, so that the present condition of affairs may become changed.

The natural resources of China are truly great, and, if the proper methods be inaugurated and due attention paid to industrial science, there is no reason why China should not equal or even excel England. I will explain. The principal exports from China at present are tea and silk. The European countries are devoting special attention to the cultivation of tea and silk. The cultivation of the latter is strenuously carried on in Italy, France, and Japan, while in India and Ceylon the same can be said in regard to tea. Such strides have been made in both of these industries in the countries mentioned that the present annual production nearly or quite equals that of China, to the great detriment of the latter in the trade of these two great staples. As may be seen by comparing the figures of the tea and silk trade, the export has steadily decreased until at present the export of tea and silk represents only about 10 per cent as compared with that of a decade or two ago; so that many foreign houses have been closed, while the Chinese merchants, owing to strong competition, have lost so heavily that they are almost reduced to despair.

Unless some remedial measures are soon adopted by China, it will not be many years when both the tea and silk trade will be monopolized by foreign producers. But, independent of foreign competition, the trade in silk and tea has been prejudiced and nearly ruined by the Chinese producers and merchants by carelessness and indifference in looking after the breed of the silkworm; by refusing to employ machinery, by want of uniformity in picking, preparing, and packing tea; and last, but not least, by adulteration and other questionable practices. While in foreign countries they avoid all the above in order to snatch away this trade from China, is it not high time for China to adopt some measure to combat this formidable competition?

In one of the reports of the inspector-general of the Chinese imperial maritime customs to the tsung-li yamên the causes which threaten the tea trade were set forth and a remedy was offered, viz, that the officials should issue proclamations calling upon the tea-producers to

adopt some measure to improve the quality of the leaf and upon the dealers to avoid any adulteration. If this recommendation is faithfully carried out, it would surely be one of the means to improve the condition of the tea trade.

Chinese cotton fabrics is another great product; but since the introduction of foreign cloths, which are both finer and cheaper, the demand for the homemade article has frightfully decreased. Especially is this true in regard to chintz and figured cloths, which, by their taking design and pleasing color, making them very suitable for women's and children's wear, have entirely driven the native prints out of the market. In other kinds of cloths the foreigner is constantly producing new designs to meet the popular taste and demand, so that many of the native manufacturers are obliged to close their establishments. Even foreign cotton yarn has in a great measure superseded Chinese yarn. China produces an enormous quantity of cotton yearly, and she should by all means establish cotton mills with machinery for weaving, printing, and dyeing the manufactured cloths, so as to be able to supply the home demand and create an export trade beside.

Although a cotton-cloth mill and a spinning mill have been established in Shanghai, yet the goods manufactured there seem to have been designed solely to meet the Chinese demand, without even entertaining the object of supplying the same to foreigners or to foreign countries. Without applying intelligent farsightedness to these great industries their extent of operation must necessarily be circumscribed.

Silk is another great product of China; but since the introduction of velveteen, satin, camlets, and other foreign fabrics the silk trade has greatly suffered, and many people who depended upon the weaving of silk for a living are thrown out of employment. To maintain her prestige China must drop her old and primitive method of manufacture and adopt modern machinery. With the latter she can to good account turn much that is now considered as waste materials, such as hair, feathers, etc., into useful textiles, whereas now foreigners gather them at a trifling cost, ship them to their own countries, convert them into useful articles by machinery, and reëxport them to China with great profit. China should convert her raw materials into manufactured articles: her straw and rushes into mats and hats, her hides into leather, etc.; manufacture her own needles, buttons, umbrellas, etc., instead of importing them from foreign countries.

Among her vegetable products turnips (beets) and sorghum can, by the aid of foreign machinery, be made into sugar which is both better in appearance and taste, besides being more profitable, than sugar made from the cane, with the incalculable advantage that both of these vegetable products flourish in every part of the Empire.

China possesses an infinite variety of medicinal plants, which, if prepared by chemical means, would be a great source of revenue to those engaged in that branch of the trade. Grapes, yung mai, and citrous fruits can be profitably made into wine, while the cereal plants would furnish material for distilling spirits. The cultivation of tobacco should be greatly extended and the products be made into cigars, cigarettes, snuff, etc. As wine and tobacco will always command a ready market in foreign countries, not to mention the innumerable Chinese who have acquired the taste for foreign wine and tobacco, if the foreign method be employed for the manufacture of these articles the profit resulting would be great and certain. Fruits can also be desiccated by the foreign process, and fish, meat, game, etc., preserved. A great field is open for the exportation of porcelain ware if due attention is paid to foreign taste in design and finish. On account of her extensive mines, China should be able to furnish foreign countries with iron and articles manufactured from it. The consumption of sheet tin in China is very great and constantly increasing. Factories for their manufacture should at once be established, and minor industries like electroplating could also be inaugurated with profit, as the demand for electroplated ware both at home and abroad is considerable. China is also rich in copper; rolling mills would therefore be necessary. Factories for making glass, soap, and matches have already been initiated in China; but they should be greatly extended, and by adopting the most approved methods great fortunes can be made.

A few words about opium, that great curse to this country. The foreign merchant brings the opium to China and takes away in its place gold and silver. Since its introduction the amount of treasure that has flowed out of the country for this baneful drug is appalling to contemplate. It is said that the Christian body in England has repeatedly petitioned Parliament to prohibit the opium traffic, but, owing to the fact that the chief source of Indian revenue is derived from opium, the Government has always refused. As China can not suppress this traffic without the coöperation of England, the only wise course remains for her to encourage home production, as the money expended on the home product by the people would remain in the country, whereas in the case with foreign opium the money goes out to enrich foreign producers. It is gratifying to know that the opium grown in Le-Chuen, Yun-Nan, Ngan-Hoei, Shen-See, Kan-Soo, and Shan-See is gradually driving out the foreign drug. Further extension of the cultivation of poppy would foster internal trade and increase the revenue of the Government without special prejudice to the people at large.

There are those who contend that extensive cultivation of the poppy plant would be prejudicial to the cultivation of food plants, but such a view can only be entertained by those who are ignorant in regard to the solution of the problem of the traffic in foreign opium.

From the foregoing it will be seen that the adoption of foreign methods has been recommended; first, to supply the home demand; second, to enable China to become an exporter instead of an importer, and thus direct the golden current to flow inward instead of outward as heretofore.

If China wishes to foster and extend her commerce, she must devote her attention to physical science and study with intense application those mechanical laws as exemplified in labor-saving machinery. In foreign countries there are many people who devote their lives to the study of physical sciences, constantly endeavoring to discover new applications of physical laws, and in consequence most marvelous results have been attained, which, to the uninitiated, seem little short of the miraculous. Physics includes chemistry, electricity, light, heat, gravity, etc. All mechanical advances have been due to some application of physical laws.

Colleges for the study of these sciences should be established at all the principal cities, with efficient corps of professors, and only bright and clever youths be admitted thereto, so that in the near future China may have a body of men thoroughly versed in physical sciences who can put their knowledge to practical test by useful inventions. General physics embraces so many branches that it would be well ordinarily for a pupil to devote himself to some special branch. In connection with the above industrial schools of practical mechanics should also be established.

In foreign countries machinery is used primarily to save human labor, but also to increase production and to insure the uniformity of the article produced. An ordinary machine is so constructed that it may be attended to by one single man while perhaps doing the work of a thousand, and, though the first cost may be considerable, yet the labor saved by it and the better quality of the goods produced far counterbalance its original cost.

In foreign countries innumerable factories are established where every conceivable article is made by machinery and in such vast quantity that after supplying the home demand an enormous export trade is carried on with tremendous profit; while in China, everything being done by hand, in spite of her enormous natural resources she can not begin to compete with those countries that employ machinery; and, unless China, too, should establish factories with modern machinery and skilled foreign mechanics, so that she could in time learn to make the machines and how to manipulate them, she must ever take a back seat. Such a plan would at once check the steady outflow of Chinese treasure.

The foregoing remarks on physics and practical mechanics are of vital importance to manufacture and trade, but there are eight other points which deserve our attention:

(1) An official should be appointed by the Government whose sole duty should be devoted to trade, with deputies to inquire into every detail. This is done in almost all the foreign countries. The benefits derivable from such a course are self-evident. China has never in the past appointed such officials, but since the establishment of the imperial maritime

customs the commissioners at the various ports have partially performed those functions, and reports on the condition of trade are submitted by them to the Government annually; but special officials should be appointed, as before mentioned, whose duty is to look after trade solely, with able assistants to study the details, such as the adoption of foreign methods or avoiding prejudicial and unnecessary changes.

(2) Joint-stock companies should be formed, so that large capital may be found for undertaking great enterprises. In the present want of coöperation in China the wealth of the country remains stagnant and great interests are neglected, to the prejudice of the commercial community at large. In order to establish factories as advocated, coöperation is indispensable, and we should imitate the prudence of foreign merchants in their joint-stock enterprises, where the management is left entirely in the hands of the merchants without official interference.

(3) To encourage invention by promulgating patent laws. Foreign governments accord to the inventor of anything new or useful a patent certificate, which entitles the recipient to a monopoly for a specified number of years to manufacture the patented article, thereby compensating him for his great labors and inciting him to further efforts. How is it in China? No sooner does a man invent something useful or profitable than somebody, ever on the alert, filches the invention with impunity from the man who perhaps devoted many years and a fortune to perfecting it. What a wretched and discouraging state of affairs. China ought without delay to adopt patent laws, in order to encourage and stimulate the inventive genius of her people.

(4) Laws against adulteration and commercial trickery. Dishonesty may prevail for once or twice, but it is sure to be detected and the harm resulting from it is not easily remedied, even by pursuing an honest policy afterwards; hence the necessity for stringent laws against all dishonest practices, in order to create confidence at home and abroad.

(5) To study the market and the popular demand, which is the secret of success of the foreigner.

(6) To hold industrial expositions, as is so frequently done in Europe and America. In these expositions the manufactures of different countries are placed side by side and their comparative merits noted, with judges to award medals, etc., to those that excel. These exhibitions increase the knowledge of the people, besides causing a healthy rivalry in the different branches of industry and creating new and wider markets. England, France, Germany, the United States, and Japan have all held international exhibitions. Would it not be a good thing for China to follow suit?

(7) In all foreign countries the import duty is very heavy to protect home industries and to check foreign competition. China should therefore revise her tariff in this respect. The export duty should be made lighter, to encourage exportation. Foreign wine and tobacco should not be duty free. The chief revenue of foreign governments is derived from them. On the other hand, the present onerous tax on the export of tea and silk should be abolished. It was excusable when China first had trade relations with foreign countries, but after so many years of experience and knowledge of foreign affairs the above order of things should be reformed at the earliest possible date, and it should be borne in mind at the next revision of the treaties. Such a course would benefit the Government as well as the merchants of China.

(8) The extension of trade. Under the present régime both the import and export trade are in the hands of the foreign merchant. To do this it is necessary to increase the Chinese mercantile navy. The China Merchants' Steam Navigation Company has already absorbed a large part of the coast and river trade which was formerly monopolized by foreigners, but this is not enough; she should establish lines with the Straits, Europe, and America. With a slightly reduced rate for passengers and freight she would be able to compete with existing lines and thus divert the trade from its present channel. This would encourage Chinese trade and create a market for Chinese products abroad, and the importation of foreign goods would then be carried in Chinese bottoms. It would also cement the natural relations of the innumerable number of Chinese residing abroad.

The foregoing eight propositions deserve immediate attention. It is high time for China to get out of the old ruts and apply herself to industrial science in relation to manufacture and trade. It is owing to her intense application to the same that England maintains her lead in the commerce of the world. It has been shown that the prosperity of a nation depends upon her attitude towards commerce and manufacture. Let us take Japan as an instance. When she adopted the European mode of dressing and living, the European merchants naturally expected to supply the new demand; but, contrary to sanguine expectations, she established factories and manufactured goods not only sufficient to meet the home demand, but with plenty left over for a considerable export to those very countries ready to supply her supposed needs. The Japanese are constantly increasing the number of their factories, and so rapidly have they advanced in mechanical knowledge that they are become a formidable competitor with Europe.

If Japan, with her limited area and resources, has attained to such commercial importance, what may we not reasonably expect of China, with her enormous resources, when she shall take advantage of modern science in manufacture and when her incalculable mineral wealth shall have been developed? Such a step would not only render China independent, but enable her to supply the rest of the world with her goods. On the other hand, if China does not change her policy, the constant drain of treasure will leave her in a few decades bankrupt.

PANG SHAN YEN.

THE PROVINCE OF ANGOLA.

REPORT BY COMMERCIAL AGENT CHATELAINE, OF LOANDA.

Having often had occasion to notice the almost complete ignorance which prevails in Europe and in the United States in regard to the province of Angola, and realizing the vast benefits which may result both to the province and general commerce from any report which would show in a clear and truthful way the vast possibilities of the district, I have endeavored in the following pages to supply, in part, the necessary information.

This report is not the reproduction of anything previously published in any language, but the result of eight years of hard study. The map of the province sent herewith, also original, will greatly facilitate the proper understanding of the whole subject.

The scale of the map and present purpose did not allow me to give many details about the district of Loanda Angola proper, which will be the subject of another map, to be drawn after my trip to the interior.

The special features of the present general map of Angola are: (1) Elimination of the crowd of useless or unwarranted names to be found on special maps; (2) proper position of the various tribes constituting the native population of the province; (3) total presentation of Angola, as recently increased—in fact, doubled—by the latest treaties with England and the Kongo State; (4) indication of all the American mission stations established in this province and occupied by about fifty American citizens. In these four respects the map is absolutely new.

POSITION AND AREA.

As defined by the recent treaties with Germany, England, and the Kongo State, the Portuguese province of Angola is one of the largest ter-

ritorial divisions on the new map of Africa. Owing to its geographic position, variety of climates, natural resources, and to the progress already accomplished in the civilization of the natives, the intrinsic value and immediate possibilities of Angola surpass those of any other possession in tropical Africa.

From 4° 40′ to 17° 20′ south latitude it has over twelve geographic degrees of seacoast and the two best harbors of the whole west coast—the mouth of the Kongo River and the Bay of Loanda. Stretching to the interior as far as the Kasai and Zambezi rivers, it forms an irregular quadrangle covering about 1,250,000 square kilometers. In the north and east it borders on the Kongo State, in the southeast on British Zambesia, and in the south on German southwest Africa.

CLIMATIC CONDITIONS.

As regards geographic latitude, the whole of Angola lies in the tropics; but in many large tracts the climate is as salubrious as any in the temperate zone. Everywhere the temperature is advantageously modified—on the coast by the sea breeze and high bluffs, where the heat in the shade is never, the year round, unpleasant; and in the interior by the elevation of the land. Of course, the distance of 12° between the extreme north and south implies a variety of climates, irrespective of orographic conditions.

The country may aptly be divided into four zones, running from north to south and parallel with the coast.

(1) The coast belt, between 50 and 150 miles wide, with an average altitude of 100 to 150 feet. Except on river banks it is, owing to its sandy soil and scanty, irregular rains, considered sterile and of little value; but throughout it is rich enough in subterranean water to become valuable as soon as capital introduces wells and pumps for irrigation.

(2) The mountain belt is formed by the peaky work of erosion of the partition wall between the high table-land and the low coast belt, as also in some parts by volcanic action. This is the zone of grand scenery, inspiring panoramas, of sultry vale bottoms, cascades, and breezy peaks, of luxuriant vegetation fed by heavy showers, and of untapped mineral treasures.

(3) The plateau, or highland belt, extending from the Kongo to the Kunene and rising gradually from 2,000 to 6,000 feet. This is the realm of grass and bush, prairie and park land, the home of antelopes, gazelles, zebras, and appetizing herds of sleek cattle, the foreordained granary and live-stock ground of the coming century. Its general aspect reminds one strongly of undulating lands in the temperate zone. It is in the southern half of this high table-land, between 3,000 and 6,000 feet above sea level, that the white race can, and will, get acclimated.

(4) The fourth zone, a recent accession and largely a *terra incognita*, might be termed the inland depression, and is formed by the Kuangu (Quango) and upper Zambezi basins and the high flats of their watershed. Rather low, swampy, and overshadowed by our ignorance of it, this region

is for the present not very inviting to the white man. But its rich soil and its wide network of water ways navigable for small craft will one day make it no less desirable than its more advanced western sisters.

As a rule, it may be stated that, as moist heat is detrimental to the white organism while highly beneficial to vegetation, the most fertile regions are also the most unhealthy, and, *vice versa*, the most salubrious districts are also the least favored as regards luxuriant vegetation. This rule, however, like all, has a few exceptions. The most unhealthy parts of Angola are never, by far, as deadly as the Gold Coast and the Lower Niger. On the coast, from Benguella north, and in all other districts held to be dangerous, it is possible for whites who can afford the comforts of life and an occasional trip to the temperate zone to live a goodly number of years, though not without paying their tribute of fever or dysentery. As a race, the whites can not expect to prosper anywhere north of 14° south latitude, but the American negroes, though by no means fever proof, could find a genial home in all the highland of the interior.

Thus, again, the high plateaus of the south, while perfectly adapted for the white race, are far from sterile. They will yield abundant crops of all that is produced in the subtropical and temperate zones, but before the highland can offer inducements to white settlers it must be connected with the seaports by means of railroads.

PRODUCE AND RESOURCES.

The staple articles of export are:

India rubber, which is still found in the forests of the Kuangu Basin, and is imported from the Kongo State. It could be cultivated in most districts.

Coffee, growing spontaneously and cultivated in the mountainous zone from the Kuanza (Quanza) River to the Mbiriji River, but susceptible of cultivation through the whole length of said zone.

Gum copal and other gums, the collection and trade of which is a source of income for thousands of natives, especially in the coast belt.

Wax, which is produced (in all zones) and obtained by the same process.

Hides, belonging to coast and plateau, rarely to the mountain belt.

Orchilla weed, exclusively to the coast belt.

Palm oil and kernels, produced on the river banks of central and northern Angola.

Ivory, mostly brought from hunting grounds far back of Angola, but still found to some extent in the southeast.

Kola nuts grow wild in the coffee district, but are not yet exported.

Cotton grows spontaneously in the coast belt and on the plateaus, and is cultivated sporadically.

As for minerals, copper, though no longer exploited in exportable quantities, is found at Bembe and many other points of the mountain belt.

Gold has been found in the sand of the Lombiji River. Silver is said to have been known to the natives in olden times. Iron is abundant everywhere, and coal crops up at Dondo. Salt is an article of export of the Kisama tribe. Clay for brick, limestone, sandstone, and granite for building purposes are as common as in most countries.

The whole coast of Angola is exceedingly rich in fish, and in the district of Mossamedes a whole colony of Algarvian fishermen live on the fish they catch, dry, and export to all parts of the coast north of them.

TRADE AND SHIPPING.

The declared exports of Angola amounted in 1890 to little less than $5,000,000, the imports to about the same sum.

Seven lines of steamers—two Portuguese, one English, one German, one French, one Belgian (to the Kongo), and one Dutch—connect the province with Europe. Though most anxious to have it, the province has no direct communication with the United States.

The principal ports are Kabinda, Kongo, Ambrizette, Ambriz, Loanda, Novo-Redondo, Benguella, and Mossamedes.

A line of small steamers plies on the Quanza River, connecting Loanda with Dondo; and the lower courses of the Lifune, Dande, Bengo, and Longa rivers are accessible to sailing craft. The coasting trade is largely done by sailing vessels.

INLAND TRANSPORTATION.

The railroad from Loanda to the interior is built as far as the Lukala River, and Catombela is connected with Benguella by a small railway. In the south most of the produce is transported from the highland to Mossamedes by the Boers in their ox wagons. Yet well-nigh the whole produce of the interior is still brought down to the coast by the human beast of burden in caravans of native traders, of whom the Mbaka (Ambaca), Ma-hungu, and Kasanji (Cassange), with terminus at Dondo or Loanda, and the Mbalundu (Bailundo) and Viye (Bihe) people, with terminus at Catombela or Benguella, are the most important.

POLITICAL DIVISION.

The province, as governed by Portugal, is divided into four districts:

(1) The Kongo district, with capital and district governor at Kabinda. It is a new district, organized since the Berlin conference, and, as it is located in the Kongo Basin, placed under the liberal régime of the same. It was again modified, in a retrograde sense, by the Brussels conference.

(2) The Loanda district, centrally located and in every way the most important. Loanda is the capital of the whole province, seat of the provincial departments, residence of the governor-general, and in some respects the finest city of western Africa.

(3) The Benguella district, ranking next to Loanda in age and present commercial development.

(4) The Mossamedes district, a modern accession, and the only district enjoying a climate adapted for the propagation of the white race.

Every district, excepting that of Kongo, is subdivided into "concelhos" (something like counties) and these again into "divisões" (or divisions, something like townships).

The provincial and district governors, with right royal powers, are by tradition naval officers; the "chefes" of the concelhos are, as a rule, officers of the army, and the commandants of the divisions are resident traders or educated natives. In the Kongo district the heads of the counties, there called residencies, have the title of "residentes" (residents). They are five in number, and the residential capitals are Kabinda (also district capital), Kakongo, San Antonio, San Salvador, and Ambrizette.

The concelhos of the Loanda district are Loanda, Barra do Bengo, Icolo e Bengo, Barra do Dande, Alto Dande, Ambriz, Encoge, Zenza do Golungo, Golungo Alto, Cazengo, Ambaca, Duque de Bragança, Talla Mungongo, Malange, Pungo Andongo, Cambambe (Dondo), Massangano, Muxima, and Novo Redondo.

The concelhos of the Benguella district are Benguella, Catombela, Egypto, Dombe-Grande, Quillengues, Caconda, and the quite recent posts of Bailundo and Bihe.

The concelhos of the district of Mossamedes are Mossamedes, Bumbo, Lubango, Humpata, Huilla, Gambos, and Humbe.

ETHNOGRAPHIC DIVISION.

The boundaries of the districts correspond, slight overlappings excepted, with those of the ethnic national stocks of the native population. The whole Kongo district is occupied by the old Kongo nation, which overlaps the northern border of the Loanda district. The latter is mainly inhabited by the A-mbundu, or Angola, nation, whose name has been extended to the whole province. The concelho of Novo Redondo alone belongs ethnologically to the Benguella group. The district of Benguella is all occupied by the Ovi-mbundu and tribes closely allied. The people of the district of Mossamedes have more affinities with the well-known Herero and Ova-mpo group than with the others of Angola. They might be termed the Kunene group. This district also embraces a few swarms of the Hottentot and Bushman families. The nations of the Kuangu and Zambezi basins, the fourth zone, are not yet administered by Portuguese authorities and are not comprehended in any of the above districts.

In Africa the safest criterion we have thus far for ethnic divisions is that of language. The people speaking one language immediately intelligible to all constitute a nation. As the nation is composed of a number of tribes, so a language comprehends the various dialects of such tribes.

The tribes of the Kongo nation, as far as included in the province of Angola, are:

(1) Ngoio, occupying the Kabinda enclave, north of the Kongo River.

(2) Solongo, south of the Kongo River.

(3) The Exi-Kongo proper, the court or royal tribe, south of the Kongo River.

(4) Mbamba, on the Mbiriji River (and scattered in small colonies in the Loanda district).

(5) Luangu, immigrants from Loango, north of the Kongo River, a tribe of wandering blacksmiths, but settled in strong colonies in the Dande Basin.

(6) The great Hungu tribe, almost a nation by itself, occupying the mountain stock around the head waters of the Loji and Lukala (Lucalla) rivers; independent.

The tribes of the Angola, or A-mbundu, nation are:

(1) The independent federation known as the Dembos (Ji-ndembu), between the upper Dande and the Lombiji rivers.

(2) The Mbaka (Ambaca), comprising the concelhos of Ambaca, Cazengo, much of Golungo Alto, of Duque de Bragança, and of Malange; also scattered in small colonies as far as the Kasai and Sankuru rivers. The Mbaka are half civilized, and generally recognize European authorities.

(3) The Ngola proper, or Ndongo, in the Hamba Basin; independent.

(4) The Mbondo, northeast of Malange on the watershed of the Kuangu, Kuanza, and Lukala rivers; nominally subjected.

(5) The I-mbangala, or Kasanji, tribe, between the Tala Mungongo depression and the Kuangu River, east of Malange; independent.

(6) The Songo, divided in Great and Little, occupying the whole right basin of the Kuanza from Malange to Viye (Bihe); mostly independent.

(7) The Haku, between the upper Kuanza and Ngango rivers, on the left bank of the former; independent.

(8) The Lubolo, between Haku and Dondo, on the left bank of the Kuanza; independent.

(9) The Kisama (Quissama), between the Kuanza, the Longa, and the sea; independent.

(10) The population of the large settlements between Malange and Loanda, on the right bank of the Kuanza, does not constitute a tribe. Composed of Loanda people and a mixture of natives from all parts of Africa, semi-civilized and directly governed by Portuguese authorities, and speaking a Portuguese creole in addition to the native tongue, it has made the greatest advance in European civilization and corruption.

The tribes between the Longa River and Egito (Egypto) are more akin to the Ovi-mbundu group, but occupy a somewhat isolated position. They are: The Mbwiyi (Amboim), between the Kuvu and the Longa rivers, the Ba-sumbe and Ba-sele, north and south of Novo Redondo, and, further inland, the Kibala.

The Ovi-mbundu, or Nano, people are the highlanders of Angola. They inhabit the region between the head waters of the Kuanza and the coast. The principal tribes are the Mbalundu (Bailundo) and Viye (Bihe), differing

physiologically, but speaking practically the same tongue. Smaller tribes are the Ndulu and Ma-lemba, on the left bank of the upper Kuanza.

The various tribes of the Nano (*i. e.*, highland), between the upper Kunene and the coast, belong to the same group as the Ovi-mbundu proper.

Along the coast and small river courses of the Benguella and Mossamedes districts are found savage tribes in a low state of culture and about whom very little is known. They are called Ba-ndombe, Ba-kuando, Ba-kuiso, Ba-koroka, and Ba-kaoko.

The larger tribes of the highland of the Mossamedes district are the Bangambue (Gambos) or Ba-nyaneka, Ba-londo, Ba-humbi, Hai, Iau, Baximba, and Ba-kuba.

Beyond the Kunene River are the Kua-mato, Kua-niama, Handa, Niemba, Fende, and the Ba-kankala of the yellow Hottentot or Bushman race.

In the fourth climatic zone, which is formed by the recent accessions to Angola—what is now known as its "zone of influence"—we find from north to south, in whole or in part, the following nations and tribes:

The Ma-xinji (Ma-shinji), on the right bank of the Kuangu River, south of the Ma-yakala. They are linguistically, but not politically, allied with the Ma-Kioko.

The Lunda, due east of Angola proper.

The Mi-nungu, on the upper Kuangu, neighbors of the Ma-Songo and Ma-Kioko.

The Ma-Kioko, along the upper course of the Kasai River, and now far scattered as hunters, blacksmiths, traders, and conquering slave raiders.

The Ngangela, east of Viye (Bihe).

The A-mbuela, south of the Ngangela and occupying most of the southeast corner of Angola as recently increased.

The Ba-rotse, in the upper Zambezi valley. They are by treaty divided between England and Portugal, as the Lunda are between Portugal and the Kongo State.

The Ma-mbunda, on the Kubango River.

LINGUISTIC DIVISION.

This, as already stated, corresponds largely to the political division and exactly to the ethnographic division.

The languages already cultivated embrace the three principal ethnic stocks of Angola. In the north, English and American Baptists are developing the Kongo language, whose court dialect (of San Salvador) is called Kixi-kongo, while that of the region around the Kongo rapids is called Ki-kongo, or Mfiote. In Angola proper, that is, in the central district of Loanda, the language is called the Ki-mbundu, and its two principal dialects, that of Loanda and that of Mbaka, have been and are cultivated by the author of this report and the Methodist Episcopal Mission. The principal dialect of the Benguella district, that of Bailundo and Bihe, has been raised by American Congregationalist missionaries to the status of literary language

of the whole district. In the district of Mossamedes no native language can yet boast of a literature.

The grammatical structure of all native languages and dialects of Angola is virtually the same and the roots of the word store are common to all; so that in the future natives of one district will without difficulty be able to read any book or paper printed in the languages of the other districts or linguistic groups.

Excepting the Ba-kankala, all tribes and dialects of Angola belong to the Bantu stock. Like all other Bantu languages, those of Angola are euphonious, rich in grammatic forms, and remarkably pure and regular.

POLITICAL ORGANIZATION OF THE NATIVES.

The political organization of African tribes is very much the same all over the continent; the differences bear rather on secondary points and the personal characteristics of tribal or national rulers. These remarks apply immediately to the tribes of Angola proper, that is, of the district of Loanda; but with slight modifications they would also be true of the other Angolan districts and of African tribes generally.

It will be found that the native African system of government is both rational and practical; in fact, as good as it could be. Neither absolutely democratic, nor aristocratic, nor monarchic, but a happy blending of these three fundamental types. Whether large or small, every village or town or tribe or nation is governed after the same uniform pattern. The legislative power is vested in the council of the elders or prominent men, which includes all freemen whose opinions have some weight in the eyes of the people. These elders are called in Ki-mbundu "ma-kota." They are the depositories of the tribe's or nation's traditional customs, which constitute the laws or constitution according to which the body of the elders, as well as the chief, are to administer public affairs, and the chief executive is to be elected. Thus this council pretty well corresponds to our parliaments.

The executive power is vested in the chief, or king, whose title is, in northern Angola, "mfumu" or "ndembu;" in central Angola, "soba;" and in southern Angola, "o soma." As a rule, the chief is elected and inaugurated by the elders, in accordance with definite rules, in one royal family, the heir to the throne being rarely the son, but most always the oldest or the ablest son of the defunct or deposed king's oldest sister. In the interest of the State, the chief has nominally absolute power over the life and property of his subjects; but practically he can do nothing without consulting the council or the most influential of the elders; and woe to him if he offends public opinion. He may suddenly be accused of witchcraft and fall a victim to the poison test or be deposed or killed by the elders with the consent and coöperation of the public.

The chief is called the father of the people, his subjects are called his children, and he is expected to treat them as such. Every chief, on being inaugurated, takes the name of his predecessor and his place in the royal

household. The State property he administers and uses for the public service, but he can not dispose of it, and his private property is kept separate. According to native law, a chief has no right to alienate the land of his people, though such dealings are of constant occurrence in the written treaties of European powers with African chiefs.

The judicial power is not vested in any special judges or courts. As soon as a question arises between two parties, one or both of them call an umpire or a court of umpires, and thus most of the quarrels are settled by arbitration. Important questions and infractions of the chief's regulations or tribal laws are judged by the chief and by the elders. The supreme tribunal, however, is that "of God," as it is called by African natives, as well as by the Europeans of the Middle Ages, that is, by the poison test or some other ordeal of the sort. Through the awe it inspires to all and the blind belief of the public in its verdict, the medicine man who administers it wields, in a limited sphere, the highest power, to which every person of the place is subject.

Every chief has a certain number of officers who assist him in his administration. They correspond to the cabinets or ministries of modern civilization. The highest officer is the chief's "vice," who often is his presumptive heir, and whose title in Ki-mbundu is "ngolambole." He is the chief's right hand, represents him in his absence, and is regent during any interregnum. The inseparable companion of the chief is the "tandala," "muzumbu," or "sakala," who is the chief's secretary, or, better, his mouthpiece. It is he who transmits all messages to the chief and the answers of the latter to petitioners or negotiators. He publishes the royal orders, receives and introduces strangers, and attends to the official correspondence—where writing has been introduced. Besides these two standing, necessary officers, Angolan chiefs have, according to their importance or pride, some of the following officers: A captain of the militia, an executioner, a collector of taxes, a superintendent of roads, of markets, etc.

In some tribes the chief may be a female as well as a male, and in most tribes the head wife of the chief—of the preceding as well as of the ruling chief—has great power and influence.

If some subjects of a chief establish a new settlement, the chief gives them a vassal chief with the royal insignia of the cap ("kijinga") and the scepter ("mbasá"), and thus originates a new line of kings, which, with time, may gather power and become paramount in the tribe. The vassal chiefs have to pay a small tribute to their suzerain.

Sometimes several towns or tribes of equal rank unite in a federation for the purpose of mutual defense, as is the case among the Dembos (Ji-ndembu). At other times an ambitious and able chief succeeds in forcing neighbors to recognize him as suzerain and pay him tribute, and thus becomes a chief of many chiefs, a "jaka." All tribes used to have a supreme chief, but in recent years their power has been waning, and the only king of central Angola who still holds sway over his whole tribe and maintains an elaborate system

of elective and hereditary nobility is that of Ngola, or Ndongo, whose name (Angola) has been given to the whole province.

The King of Kongo has dwindled down to the status of a public functionary of the Portuguese Crown, and his dukes, counts, and barons may be considered things of the past.

In Angola there is no trace of the military despotic system of the Ama-Zulu nor of tyrannic Neros like the kings of Dahomey.

SOCIAL ORGANIZATION.

As in most Bantu tribes, it is the mother and not the father who determines consanguinity; therefore, the child of a sister is held by a man to be his nearest descendant and legal heir. The children belong to their maternal uncle and not to their father. The father's relation to his children is as loose as, with us, that of a stepfather to his stepchildren. The uncle has the right to sell his nephews and nieces, separating them from father, mother, brothers, and sisters.

Polygamy is everywhere honored, though its evil concomitants and consequences are not ignored. Every wife has her own house, gardens, and private property. The first wife, or head wife, has a limited authority over the concubines, and the whole system works much more smoothly than people in civilization would imagine. Still, its demoralizing effects are everywhere visible, and there is no hope of a regeneration of the race as long as polygamy is not condemned by public opinion and finally eradicated. The family is the foundation of the state, and monogamy the corner stone of a normal household.

The absence of metal or paper money to represent capital has much to do with the popularity of polygamy, as each additional wife, with house, children, fields, and cattle, is considered a paying investment of capital. The presents given by the wooer for his bride are not, as usually represented, her "price," as though she were simply bought, but the symbol and pledge of the contract entered into. If he treats her unmercifully, she can run away, and he loses his deposit. If, on the contrary, she should prove unfaithful, the parents will have to return the equivalent of the wooing present. Thus it is a mutual check.

The greatest festivity of the native Angolans is not the wedding, but the funeral, called "tambi." All the relatives and friends gather and have a regular "blow-out" as long as there is anything left.

Circumcision is very widely practiced, but obligatory only among a few tribes.

SLAVERY AND SLAVE TRADE.

There is no corner of Angola where slavery is not in practice among the natives. Nor can slavery exist without slave trade. The worst horrors of the traffic, however, do not appear in the local trade. They are enacted in the extreme east of the province and in the unsubdued parts of the Kongo State, where the Ma-Kioko and other tribes raid the slaves they bring to the coast.

It is then that villages are attacked, burnt, sacked, and the human flocks driven to the slave markets, many dying on the road, while others are used as beasts of burden to bring to the coast the rubber, the wax, and the ivory so coveted by the whites. Legally, slavery is abolished in all Portuguese possessions. But forced labor, under the name of legal contract, is more flourishing than ever, and it is to supply the demand of the great coffee plantations of Cazengo, of the great cane (rum) plantations of the Kuanza and Dande rivers, and of the coffee and cocoa planters of St. Thomas and Principe that the Kasanji (Cassange), Bailundo, and Bihe traders canvass all central Africa, in search of the human plunder of the Ma-Kioko raids.

Domestic slavery among the natives is an evil, no doubt, but not to be compared with that of contract labor on the plantations. The slave of the uncivilized native is treated as a child and often loves his master like a father and his mistress like a mother. His master having no more needs than he, the slave is often as well off as the master. He has very little work to do, and all he earns in his free time is his own, so that, if he wants to become free, he may after a time redeem himself. Not so with the plantation laborer. The exacting white man is determined to squeeze out of him every cent he may produce, and the manatee whip is from early morn till dusk in the hands of the foreman and even of the planter himself.

The plantation hands of Angola, St. Thomas, and Principe are, in almost equal numbers, Ba-sele and Ba-sumbe of Novo Redondo, Lubolo people, contracted at Dondo, and people from beyond the Kunene—Ngangelas, Lundas, Kasanjis, and other less known tribes.

RELIGION.

The ever-repeated assertion that the Africans are fetichists, that is, worshippers of inanimate objects, is utterly false. The Angolans have the same religious system as the Bantus generally. They are not idolaters in the strict sense, nor polytheists, and much less atheists, but superstitious deists. They believe in one great God, who made and maintains all things, invisible, yet seeing even the thoughts of men, the author of all the good, but also of much of the suffering. They generally think that God is angry with mankind and indifferent to the details of their daily life. They do not formally worship God, nor represent him by any image, nor do they believe He is contained in any fetich. The only carved image which the Angolans call God is an imitation of the crucifix, and they clearly state that this is the white man's God, not the God of the universe. And they call it God, because the Catholic priests taught them, showing the crucifix.

What travelers generally call African gods are no gods at all, but inferior spirits, to whom God has intrusted the administration of natural forces. These inferior spirits and the shades of the deceased are the supernatural beings whom the natives fear and serve. With them they converse through the media of their "i-mbunda," them they seek to propitiate by offerings and sacrifices, and to them they attribute most mysterious accidents of their simple life.

What images the natives have and horns, bones, stones, and sticks, so often called their gods, are simply amulets and talismans consecrated by their medicine men, differing in nothing but the form from the host of amulets sold in many countries in Europe.

He believes that when he dies he lives on in hades much the same as he did on earth, only much longer—how long no one can tell; but if man dies again in hades, he goes to another place about which nothing at all is known. The slave dreads to die as a slave, because he thinks he will enter the other life as a slave and continue in that inferior state. Therefore, he entreats his master to give him his liberty as he passes from this life.

The Angolans do not seem to have any definite idea of a hell or paradise; all go to the same region and are there, as here, the authors of their own good or bad fortune.

NATIVE INDUSTRIAL ARTS AND COMMERCE.

The student of ethnology in Angola is confronted with the strange but incontrovertible fact that the development of native arts is in inverse ratio to the contact the people have had with civilization. European trash is making havoc in native industries, and alcoholism blunts the sense of beauty, dignity, and all skill.

All the fine specimens of native manufacture have to be sought in the most uncivilized (and unbrutalized) corners of the land, and Angola is inferior industrially to some of the remotest tribes on the Kasai and Lulua rivers. Instead of the decaying native industries, European trades are becoming more and more general, and one may hope that, when taught by able masters, the natives will show in the civilized trades as much taste and skill as they used to show, and some still show, in their primitive manufactures.

The principal native crafts are (1) agriculture, (2) hunting, (3) fishing, (4) pottery, (5) carving, (6) basket-making, (7) weaving and dyeing, (8) smelting and smithing, (9) trading, (10) medicine and divining, (11) apiculture. The European trades which have been generally introduced in the district of Loanda and largely in the other districts are (1) tailoring, (2) carpentering, (3) cooperage, (4) masonry, (5) shoemaking.

The people of Kongo weave beautiful mats made of palm fiber, but commonly called grass mats, which used to be the currency even long after the advent of Europeans. The Kongo people bring these mats to Loanda and barter them for courie shells, still used by some tribes as currency, and for dried fish. The people around Encoge grow and collect coffee, which they sell to Ambriz and Loanda. The Luangu people travel far and wide as blacksmiths and brass smiths. The Hungu tribe grow coffee, which they sell at Cazengo, Dondo, and along the Loanda Railroad. The people of Golungo Alto and Cazengo grow coffee and staple food articles. The Ambaca tribe is given to agriculture, trading, European crafts, and generally to pioneering for civilization. The Mbamba tribe, of Malange, makes

a specialty of the carrying business, which the Ma-songo and Ngola have also undertaken within the last ten years. The Lubolo tribe seems to be breeding children in order to sell them. The Kisama tribe produces salt, honey, and wax and weaves mats and hammocks for export to other tribes. The Ba-sumbe and Ba-sele, like the Lubolo, seem to live on the trade of their own children and kinsmen.

The Ovi-mbundu, of Bailundo and Bihe, are great carriers and traders; the Ba-ndombe great cattle-raisers; and of the other tribes no special industry is known, the care of live stock seeming to be their principal occupation.

All through the coast belt many natives earn their living by collecting orchilla weed, baobab fiber, cotton, and different gums.

PHYSIOLOGIC DATA.

If in the early times of the black race there were distinctive national and tribal types and features, the countless crossings due to the systems of slavery and polygamy and to great wars must necessarily have blended and obliterated them. The famous characteristics of the negro and Bantu races, making them look as different as the Germanic and Semitic types, exist only in books and imaginations. There are some very striking types differing considerably one from another, but they are peculiar to no special tribe or nation of African negroes. Still, wherever the natives have been settled for many centuries and have a peculiar climate, peculiar food, and occupation, some tribal characteristics have developed, but the exceptions are always numerous. Thus the Krooboys (outside Angola), given to paddling and to a rice and fish diet, have an extraordinary development of chest and arms and a peculiar formation of the legs, which determines a characteristic gait. In Angola the fishermen of the island of Loanda are tall and have fine busts. The Kisamas are rather short, wiry, have scarcely any calves, and have a wary look. The Lubolos are of a bronze color, have round or angular heads, and are medium-sized. The Ngolas are dark, thin, and well formed. The Mbamba and Mbondo have nothing attractive, but are wiry. The Ma-songo and Mbalundu are of a chocolate color, tall, erect, have well-formed limbs and an open countenance reminding one of some European types. The Ba-ndombe, given to herding and milk food, are well-formed and have a well-developed musculature. But, as already intimated, these characteristics are less to be depended on than those of European nationalities.

Abnormities, such as dwarfs, giants, and albinos, occur, though not very frequently. Goitres are common only in the highlands. Elephantiasis is very frequent on the coast, but affects the men much more than the women. Blindness is mostly due to smallpox. Cases of extraordinary longevity are not rare. Insanity is not rare, especially in the proximity of civilization. Immorality and syphilis is incomparably rifer in the neighborhood of white settlements than among the independent tribes. Obesity is unknown among the uncivilized, but rather common among the civilized natives.

Angola has, in proportion, a larger mulatto or mixed population than any other part of the west coast. The white population, too, is much more numerous in Angola than in any other part of tropical Africa.

THE WHITES IN ANGOLA.

The Kongo River and the Angola coast were discovered in 1484 and 1486, under the reign of Dom João II, by Diogo Ção. The Portuguese were hospitably received by the then King of Kongo, Neginga-a-Cuum, as the Portuguese pronounced the name. In 1491 the first Catholic mission landed at the Kongo, and the same year the King and many of his subjects were baptized and a church built. The King of Portugal and the King of Kongo called each other brothers, and for some time the rapid civilization and christianization of the great Kingdom of Kongo seemed assured. But already in 1540 a King of Kongo complains to the King of Portugal about the priest Alvaro attempting to assassinate him, and in 1550 his successor accuses the Jesuits of political intrigues. Until then the King of Angola, residing at Loanda, had been a vassal of the King of Kongo. But in 1557 he sent an embassy to the King of Portugal asking to be treated on equal terms with the King of Kongo. His request was granted, and in 1559 Paulo Dias de Novaes sailed for Angola with a company of Jesuits. When, however, in 1560 they arrived at the bar of the Kuanza River, they found another King of Angola, who had them arrested; but they escaped to Kongo. In the wars which ensued between Kongo and Angola the latter seemed to triumph, and an appeal was sent from Kongo to Portugal for help. In 1574 Paulo Dias de Novaes sailed again for Angola, this time with seven ships, carrying 350 warriors and as many colonists, no longer to help Angola against Kongo, but to conquer it, he, Novaes, bearing already the title of governor and captain of the conquests of Angola. He met with no opposition, and in 1575 founded the city of Loanda on the site it still occupies. In 1578 he founded the town and colony of Calumbo, on the Quanza (Kuanza), and another on the Bengo River. The same year he was reinforced by 400, and the following year by 200, men from Portugal. In 1579 some colonies were established on the Dande River. In 1580 he had a war with the chiefs of Kisama. Three years later he founded Massangano and gave a great battle to the King of Angola, who was beginning to surmise that his white friends intended to deprive him of his Kingdom. From that time on the war between the Kings of Angola and the Portuguese never completely ceased until the King and special tribe of Angola (Ngola) were driven to their present quarters on the Hamba River, where they have lived on two hundred years in peaceful independence. Many of the vassals of Angola joined the Portuguese, others submitted, and others made themselves independent of them. Thus most of the petty tribes of the times of the conquest occupy to-day the same sites as four hundred years ago, nor have the names, customs, and modes of life materially changed. Novaes died in 1589 at Massangano, and his successors continued the work of conquest with perseverance, though with less success.

The first white women were sent to Angola in 1594. Until 1597 the Catholic church of Kongo and Angola depended from the Bishop of St. Thomas and Kongo, residing at St. Thomas. In that year was erected the bishopric of Kongo and Angola, with episcopal see at the capital of Kongo, San Salvador.

The first Dutch fleet to cruise along the coast of Angola appeared in 1629, but it did nothing. In 1637 and 1641 other Dutch ships had unimportant naval engagements with the Portuguese. But on August 24, 1641, a Dutch squadron attacked and occupied Loanda, compelling the Portuguese to withdraw to the interior. In 1645 the Dutch also occupied Benguella. Hostilities between the Dutch and the Portuguese continued with almost equal success on either side until 1648, when Salvador Correa de Sá e Benevides, hailing from Brazil, landed in front of Loanda, reconquered the city, and after a series of victories finally expelled the Dutch from Benguella, Kongo, Kabinda, and Loango.

In 1760 the Jesuits were expelled from Angola, and have only reëntered it, unofficially, in recent years. Only in 1758 and 1761 were Kongo and Angola opened to commerce, as previous to that the Government had the exclusive privilege of trading. The first custom-house was built in 1766, but only in 1848 was a regular tariff established.

In 1858 came to Loanda the first (Portuguese) steamer of the line União Mercantil, owning four steamers. This company was followed by the Companhia Geral de Navegação a Vapor and the Companhia Lusitana and in recent times by the Empreza Nacional. The first English steam navigation company to run steamers to Loanda was the African Steamship Company, in 1871. The Kuanza River Steamship Company was founded in 1865 by the American, Archer Silva.

The National Ultramarine Bank began its operations in 1864.

The Kingdom of Kongo, after an apparently wonderful progress in civilization and Christianity, began soon to be torn up by dissensions with the Portuguese, and, worse yet, by civil wars, which went on weakening it, until in the beginning of this century its old power was almost completely gone and the country abandoned by the Portuguese. It was to some extent reoccupied in 1859 from Ambriz, but was finally reduced to a Portuguese district only after the Berlin conference in these latter years.

Ambriz, now an important town, belonged originally to the native Marquis of Musulu (Mossulo), was occupied in 1792–'93, and opened to the commerce of all nations in 1855, since which date it has grown to be one of the first ports of Angola. Benguella was founded in 1617, and bore the title of Kingdom of Benguella until 1836. It had a governor of its own independent of the governor of Angola, but now it is simply a district of the province. The Portuguese dominion was extended to Caconda in 1620, but not before 1890 was the highland of Bailundo and Bihe finally conquered. The city of Mossamedes is quite modern. It was founded by a Portuguese colony hailing from Brazil in 1849, and strengthened in 1850 by a new acces-

sion of colonists. Since then the immigration of whites has never ceased, and now the district of Mossamedes has by far the strongest white population. Since 1839 Mossamedes had been occupied by a Portuguese post, with a commander bearing the title of governor of the presidio, but it received the name and organization of a town only from 1851 to 1857. The present important town of Dondo, near the old fort of Cambambe, was occupied as a small post in 1857 and organized as a municipality in 1870. It owes its existence to the Quanza Navigation Company and to the coffee plantations of Cazengo. The concelho of Cazengo, now the most important agricultural district of Angola, was left to the natives until 1835, when the first coffee plantation was established at Colonia. As soon as the railroad from Loanda reaches the heart of this concelho the culture of coffee will become the main source of wealth of Angola. Malange, now an important town and destined to become the capital of the new district to be established in the fourth zone, was, in 1853, when Livingstone passed through it, a miserable hamlet infested by Ngola highwaymen. It became a post in 1857 and was abandoned in 1870, but was soon reoccupied. It has been governed by Portuguese "chefes" since 1857. As the starting point of many German exploring expeditions, Malange has quite a name in geographical circles. It owes its existence to the rubber trade.

THE BOERS IN ANGOLA.

The only white people established in Angola besides the Portuguese are the Boers, a small colony of whom "trekked" from the Transvaal and arrived on the plateau of Mossamedes in 1881, settling down at Humpata in 1882, when they were, by royal decree, declared to be Portuguese citizens. They have not even begun to mix with the Portuguese and native populations, but live in Angola just as they did in the Transvaal, as independent farmers. They have swarmed off in different smaller colonies. They have rendered valuable services to their district and to the Portuguese Government by building a canal, a road to Mossamedes from the plateau, by carrying freight on their mighty wagons, and by their valor in the wars against Bihe and Humbe. A new "trek" is expected, and the Portuguese begin to fear that a strong colony of Boers may be the nucleus of a future republic.

OTHER NATIONALITIES.

At Ambriz and in the district of Kongo are found a number of English traders; in Loanda there is one English firm, and the cable men are Englishmen. A large number of Sierra Leone and Accra tribesmen work on the railroad. At Benguella and Mossamedes the employés of the cable company are the only Englishmen.

Germans and French are very rare as traders, but the Loanda Railroad employs quite a number of Frenchmen and Belgians.

From the Kongo to Benguella the largest trading firm is the Niewe Afrikaansche Handelsvenootschap, and most of its agents are Dutch.

Since the closing of the United States naval store at Loanda and the death of Archer Silva no American traders have settled in Angola; but since 1881 several American missionary societies have opened stations among the natives of Angola, and now they are quite an important factor in the foreign population of the province. The present number of the American missionaries in Angola is about forty, including women and children.

The American Baptists have two stations in the Kongo district, the Methodist Episcopal Church has six stations in the Loanda district (Loanda, Dondo, Nhangue, Kiongua, Pungo Andongo, Malange), and the American Board (Congregationalist) has three stations (Bailundo, Kamundongo, Cisamba) in the district of Benguella.

EDUCATION.

This is a very weak point in Portuguese administration. The capital, Loanda, with probably more than 15,000 population, has a nominal high school, with a building, a staff of teachers who attend to other professions, but no visible teaching. A few primary schools of the municipality are attended, but most irregularly. The other cities of importance—Ambriz, Dondo, Benguella, Mossamedes—all have primary schools, but there, too, the attendance and the teaching are ridiculous compared with the population and commercial importance of the towns. Every concelho is supposed to have a school of some sort, and no doubt the money for the office of teacher is claimed by somebody; but the official returns themselves show that the teaching is more than poor. Notwithstanding the great lack of Government schools and teachers, the district of Loanda has thousands of natives who can read and write to some extent; but by far the greatest number have been taught by volunteer native teachers, who, themselves terribly ignorant, take a few children for a trifling remuneration and impart to them what little they know. In the interior many natives can only read manuscript, as their teachers had no books and could only teach them to read their own handwriting. The great tribe of the Mbaka has hundreds of such rudimentary unsupported schools, where teachers as well as pupils have never even seen a decent schoolbook, a slate, or a blackboard. Often teacher and pupils make their own ink with certain leaves or berries, their own paper with banana leaves, and their own pens with the stalks of a tall, strong grass.

Though the law requires the owners of contract laborers to give the latter primary instruction, that plantation is yet to be found where something like a school for the farm hands exists. The best schools in existence are those of the Catholic and Protestant missions, but in none of them does the teaching go beyond the primary degree. A college is the most crying need of this great and wealthy province.

HELI CHATELAINE,
Commercial Agent.

UNITED STATES COMMERCIAL AGENCY,
Loanda, June 22, 1892.

AMERICAN AND SPANISH AMERICAN TRADE RELATIONS.

REPORT BY MINISTER ANDERSON, OF LA PAZ, BOLIVIA.

IMPROVED MEANS OF COMMUNICATION.

In every project for the expansion of our trade with the republics of Central and South America improved water communication must stand first among the recognized essentials to this great end and the one most deserving of prompt and generous Government aid. The advantages to accrue to the United States from a completed intercontinental American railway give high importance to this great scheme of communication and is also deserving of the hearty encouragement of our people and the generous bounty of the Government. Improved water communication means to us the same facilities for trade with these countries now enjoyed by the maritime nations of Europe. Railway communication means a wholly new and to us a practically exclusive agency in the development of our commercial transactions with Spanish America. With this added arm of power we can with ease win the international contest for the trade of these countries, despite the present commercial supremacy of Europe on our southern continent. The chief hindrance to trade with an inland country like Bolivia and other regions of South America occupying a like mediterranean position is the great cost of transporting goods from the ports of either ocean to the interior of the continent, where, for the most part, are found the chief centers of the mining and agricultural population. Under existing conditions supplies for these districts must, as a rule, be transported enormous distances by pack trains of mules, donkeys, and llamas and at great expense.

The impetus given to South America and South American investments as the direct result of the Pan-American Conference means in the near future a largely augmented mining and agricultural population and a consequent increased demand for supplies throughout these districts.

With an international railway passing through the interior of the continent, as it must in order to fulfill the object of its construction, this demand can be met by the United States as against the world. Steamships, of course, will always furnish the cheapest, and constitute the principal, means of trade transportation, but time is of the essence of our trade relations with Spanish America; and as certainly as it is imperative that the time of credit extended to the merchants of these countries purchasing our goods should be lengthened to meet the long credits given by European merchants, so it is that the time of communication between us must be shortened. Faster and increased numbers of steamship lines must, of course, contribute their share to this end, but rail connection solves the problem of time as steamship lines never can. Once connected by rail with the countries south of the Isthmus of Panama, the United States will become the objective point of the South American merchant and tourist, and thus coming in contact we shall come

to know each other better, shall discover that we have interests in common, and the ultimate end sought, viz, reciprocal relations of friendship and trade, will thereby be more rapidly advanced than could otherwise be possible.

No citizen of the United States visiting South America or temporarily residing here will question the statement that the people of this section of the western continent prefer to trade with us if they can do so on equal terms with those offered by the countries of Europe. They hail with satisfaction every proposition that tends to this result, and hence it is that the proposed intercontinental railway is regarded with special favor. Bolivia, being an inland republic, is particularly hearty and sincere in her support of this measure.

The action of the International American Conference upon this subject has created a spirit of enthusiasm in favor of railroads and internal improvements to which Bolivia has hitherto been a stranger. New lines of railway are being built and projected, and new interest is being everywhere awakened in the vast agricultural and mining resources of the Republic. Hitherto we have been content with the small annual trade our southern neighbors voluntarily brought us, while to-day we are seeking their markets for customers for the rapidly increasing surplus products of our farms and factories. A careful study of the mutual benefits certain to result from closer commercial relations between the United States and the other American republics has led to a mutual desire for the speedy consummation of this end, and therefore it is that national aid for the early completion of the great Nicaragua Canal and for the establishment of adequate transportation, mail, and banking facilities is a popular and growing sentiment with the people of the United States, and its beneficent results the fond dream of our less-favored American neighbors.

The time is near at hand when direct effort beyond anything yet seriously proposed or undertaken in behalf of the great public enterprises mentioned will so far become the focus of public sentiment that their adequate support will have the unqualified indorsement of everybody.

CHEAPER TRANSPORTATION.

When Europe undertook to secure the trade of these countries, cheap transportation was at once recognized as an essential condition, and to that end direct steamship lines were established to both coasts. The most sanguine expectations of the promoters of these lines being more than realized, line after line was added, until to-day there are five direct and competing European lines to the west coast of South and Central America and more than thirty to the east coast. The United States has but six to the east coast, five of which are owned and operated by English companies and sail under the English flag, while on the west coast we are wholly unrepresented.

Under these conditions transportation is necessarily against us, and especially to the west coast, whence goods shipped from New York must either go via Liverpool or do what is infinitely worse—pay the enormous freights

charged by the Panama Railroad Company for carrying them across the isthmus or the necessarily high charges by sailing vessels via Cape Horn.

The freights from New York via Liverpool to Mollendo, Peru, the Pacific terminus of the Mollendo and Puno Railway, over which Bolivian commerce largely passes, is 17*s.* per ton, as against 10*s.* to 12*s.* from Hamburg to Mollendo, a difference in favor of the latter of from 5*s.* to 7*s.* per ton; while by sailing vessel from New York the freight charges to Mollendo are from 25*s.* to 35*s.* per ton, or from 200 to 300 per cent more than from Hamburg. Steamer freights via Panama to the same point are 50 cents per cubic foot, or about $20 per ton, while insurance and all shipping charges are cheaper from Europe than from the United States.

It is apparent that until we are in a position to transport our products in American ships sailing under the American flag the present excessive freight charges will continue to debar us from anything like a fair share of the trade of Spanish America. England, always alert and vigilant in promoting trade relations abroad, has hitherto had a virtual monopoly of the carrying trade of these countries, simply because from the first she assisted, as she continues to assist, every new packet line touching these shores until they become thoroughly established and self-supporting. France, through her mileage and tonnage bounty system, and Germany and Italy, through the aid of subsidies and shipping bounties, are busily preparing to compete with England for the carrying trade of the western hemisphere. If, therefore, we are to figure in the future trade of our own continent, it behooves us to enlarge our merchant marine and promote the intercontinental railway scheme, until we have not only secured the establishment of the requisite number of direct, independent, and self-supporting steamship lines between both our Atlantic and Pacific ports and those of the Latin-American republics, but until we are also united to them by iron rails. Nor is it necessary, in my judgment, that more than three lines of steamers be established in order to successfully compete for the trade of Central and South America. Let two lines be established from New York for both coasts and one from San Francisco to Valparaiso, and we can, for the present at least, do practically all the foreign business now offered by these countries.

If, however, Government aid is to subserve the end desired, viz, the establishment of quicker and cheaper communication, it should only be extended upon the express condition that the lines so subsidized shall, during the period covered by the Government's bounty, carry both freight and passengers at certain fixed charges; otherwise they may charge what they please and thereby defeat the very object intended. Moreover, we should in some way control the Panama Railroad until such time as the Nicaragua Canal may be completed and opened to traffic. Under the present management nearly, if not quite, 50 per cent of the cost of shipping by steamer from New York to the west coast by this route is paid to this company for carrying freight across the isthmus, a distance of but 47 miles.

BETTER BANKING FACILITIES.

The absence of adequate banking facilities between the United States and Spanish America is almost as serious a hindrance to the promotion of trade with these countries as the absence of adequate means of communication. In almost every city on the east coast European banks with branch offices are met with, while on the west coast the banking is done through the local banks and business houses having their foreign connections with Europe only. The facilities thus offered for purchasing exchange on Europe are ample, while it is almost impossible to buy a bill of exchange on the United States in any part of South America, except in those countries where we have an exchange on staple goods, such as coffee, rubber, hides, etc.

As all bills for American goods must therefore be paid by drafts on London, our merchants are obliged to reduce their bills to pounds, shillings, and pence when drawing for settlement, and, on the other hand, pay thousands of dollars every year for the privilege of buying European exchange with which to meet their South American obligations. It is apparent, for these and other reasons, that we can not afford to continue to depend, as now, upon Europe for our banking facilities.

BRANCH HOUSES.

The principal merchants in nearly all South American countries are either Englishmen or Germans, having their own representatives in those countries and whose South American trade connections have been established for many years. Their local houses and the subordinate branches which they maintain in all the adjoining business centers are, as a rule, simply branches of the principal establishment in Europe. For instance, all of the leading foreign houses of La Paz maintain branches in Oruro, Cochabamba, Sucre, Potosi, and Santa Cruz and thereby reach the trade of the entire Republic. Being thus on the ground with a line of goods carefully selected with reference to the market, and being familiar with the financial standing of their customers, they are prepared to give terms that would be impossible for our merchants to offer in the absence of similar advantages. Well-organized local commission houses carrying full and judiciously selected lines of American goods, with corresponding branches in all the leading cities of the country, would, however, fully meet with the requirements of the foreign trade of Bolivia, which, though far less than some of the Latin-American republics—being about $32,000,000 per annum—is sufficiently large to invite the sharp competition of English and German merchants for its control.

PECULIAR FEATURES OF THE TRADE.

While there is nothing, from the finest broadcloth to the latest Parisian fashions, too good for the wealthier classes, there are certain lines of goods used in Bolivia and other South American countries, such as cheap prints, muslins, hardware, and the like, for which there is little, if any,

demand in the United States. Our American manufacturers, not having calls for this class of goods in a country where the standard of quality and finish is essential to success, are not prepared to compete with the European manufacturers in furnishing this class of goods, while the European manufacturer, knowing the trade, ready to meet its peculiar requirements, and recognizing the fact that they do not have among the working classes of these countries, who are mainly Indians, an intelligent and appreciative consumer capable of appreciating the fine quality and finish of an article and that price rather than quality is the matter of first consideration with the purchaser, adapts his goods to meet these conditions: It is true that in countries like Peru, where there is not an average of $1 per capita in circulation, the people have not the money to buy with.

The difficulty in Bolivia, however, is not so much a lack of money as a lack of intelligent discrimination between a practically worthless article at a reduced price and one of real worth at a slightly increased cost. It is apparent that under these conditions we must either lower the standard of our goods or await the slow process of educating these people to a higher standard. In no event should we lower the standard of our goods; to do so would be to take a step backward for a mere temporary advantage that in the end would prove a permanent injury to our trade with Spanish America. While the ideas and tastes of the laboring classes of these countries advance slowly, they are none the less advancing. From the ox team and wooden plow, now used in Bolivia and in the interior of Peru and other regions of South America, the farmers along the coast have passed on to a steel plow with a single handle, and will presently be ready to till the soil with harnessed horses and double-handled steel plows, after the fashion of our progressive and more highly favored American farmers. Already the better classes are beginning to purchase foreign goods with discriminating care. They pass by the German article as trashy, accept the English as fair, and buy the American in preference to all others if assured of its genuineness. In order to check the growing sentiment in favor of our goods, foreign merchants in these countries send to Europe samples of all American novelties and improvements as soon as they are received, and there have them counterfeited, even to the trade-mark and name of the manufacturer, and then receiving their consignments of these fraudulent goods, sell them in competition with the genuine article. Although these goods are in every way inferior in quality and finish, they are accepted by the unintelligent and unsuspecting purchaser as genuine, because they bear the name and superscription of the standard article. Not only are our American manufactures thus discredited by this class of European merchants, but our trade is further handicapped by the fact that for the most part we must not only do business with the same class of merchants, who are not only in sentiment opposed to our acquiring the trade of these countries, but are actively engaged in preventing us from doing so.

As further indicating European trade methods in these countries, it is worthy of note that in certain parts of South America the European manufacturer does business directly with the merchant, giving them from six to twelve months' credit and charging them a small rate of interest from the date of invoice. This they can well afford to do, because of the large amount of unemployed capital in Europe.

These facts simply serve to emphasize what has here been said in regard to the importance of having our own representatives on the ground. It is by reason of being thus constantly and everywhere represented in the business centers of South America and by giving liberal credits that a certain New York firm is enabled to practically control the trade of these countries on such goods as patent medicines and drugs.

CLASS OF GOODS USED.

The largest consumers of certain classes of goods in South America are the railroads, which are entirely under the control of English capital and influence, thereby necessitating the purchase of their general supplies in Europe. The superiority of our American locomotives, cars, and all classes of railway machinery has, however, forced them to patronize our American shops for this class of purchases.

The industry of working wood by machinery is a growing one in these countries, and the trade for all classes of wood-working machinery is given to the United States. The Eagan Company, of Cincinnati, Ohio, controls 50 per cent of the South American trade in this class of goods, simply as the result of their enterprise in successfully placing their superior goods before the South American buyer. The Niles Tool Works, of Hamilton, Ohio, through dint of energy and the quality of their goods, are also meeting with fair success in introducing their iron-working tools of every description to the South American trade. American watches have long been known in Bolivia and throughout South America as preferable to those of European manufacture, not only on account of their designs, but the superior workmanship of their movements and astonishingly low prices. The Keystone Watch Company, of Philadelphia, has been meeting with remarkable success in introducing to the trade their patent filled cases, while all classes of American watches are meeting with high favor among the dealers of the country. Silver-plated ware of United States manufacture is also preferred here, because it is not only cheaper, but far handsomer in design, than that of European manufacture.

The success with which the Fairpoint Manufacturing Company, of New Bedford, Mass., is meeting in placing their goods of this class before the South American buyer is another example of what may be accomplished in these countries through characteristic Yankee push. While lard, hams, and the like brought here from the United States are lower in price and better in quality than those of other countries and we practically control the trade, the demand is quite limited, because the local article, though sadly inferior

in quality, is considered good enough to suit the market; besides, the present excessive import duties are against us. There is a growing demand in Bolivia for mining machinery and mining and carpenters' tools, galvanized-iron roofing and siding, axes, and ax and pick handles. Dress goods of all kinds and gray shirtings can be sold here, but not white, because, the American article, being free from the starch and gum common to the white muslins of Europe and better in every sense, and therefore slightly higher in price, the inferior and cheaper European article is preferred. In the line of dress goods our American manufacturers are not producing at present the class of goods needed here. Their styles and widths are not what the market demands. This class of goods comes almost exclusively from Europe and is made up specially for the Bolivian trade. It is the practice of the merchants here to supply the European manufacturers with samples of the kinds of goods needed, and their orders are filled accordingly.

CONCLUSION.

In conclusion, it may be confidently affirmed that, independent of the difference in cost of transportation, we are already prepared to meet the South American prices of the merchants and manufacturers of Europe and, with equal transportation facilities, to easily undersell and outsell them in every market of the country. Cheaper transportation will demonstrate that our markets are their cheapest source of supply for practically the whole range of our surplus products adapted to the requirements of South American trade. As soon as we have supplied the first condition of trade already mentioned, namely, shorter and cheaper means of communication, and have established in all the leading cities of these countries American branch houses carrying judiciously selected stocks of American goods and under the management of wide-awake Americans familiar with the Spanish language, the people, and the manner of doing business, we shall so far outrival our European competitors that their present commercial supremacy in Spanish America will shortly cease to be a part of its current history.

T. H. ANDERSON,
Minister.

UNITED STATES LEGATION,
La Paz, Bolivia, August 30, 1892.

PERNAMBUCO-SENEGAL CABLE.

REPORT BY CONSUL STEVENS, OF PERNAMBUCO.

In compliance with the Department's request, I have the pleasure to submit some further items relating to the new cable now being laid between this port and St. Louis, Senegal, Africa.

I was somewhat misinformed in relation to the new cable laid between this port and Rio de Janeiro, yet the mistake was of no serious import. As I stated in my previous communication, the Western and Brazilian Telegraph Company laid a new line between this port and Rio de Janeiro; since then they have duplexed both lines, virtually giving them four lines between the two ports. The cable steamer *Silvertown* performed this service.

The new cable line between this port and Senegal is called the South American Cable Company (limited). The head office of the company is in Cannon street, London, E. C. The capital of the company is £500,000, fully paid up. Among the directors are Robert K. Gray and Sir Charles Tupper. This cable is being laid by the India Rubber Gutta-percha Telegraph Works Company (limited), of Silvertown, London, and Beaumont, France, owners of the *Silvertown* and stockholders in the new company. This company has obtained a valuable concession from the Brazilian Government extending over a period of twenty-five years, the terms of which I am as yet unable to learn, but I am privately informed that it virtually amounts to a monopoly.

The steamship *Silvertown* returned here nearly three months ago with Mr. Robert Gray on board and proceeded hence to Rio de Janeiro. They had some difficulty in obtaining this concession to their satisfaction. They, however, overcame the opposition and are now proceeding with the work. The cable was completed from here to Fernando de Noronha about a week ago, and the benefits of this short connection are already apparent. As this island is nearly in the direct route between this port and Europe, we have already received notice of the passage of steamers.

The steamship *Silvertown* is now in Bahia taking in 1,000 tons of coal, and the manager of the company has just shown me a telegram stating that the steamer will arrive here on the 27th instant and proceed with quick dispatch to the island of Fernando de Noronha and will at once commence paying out the cable between that island and Senegal, Africa. They expect to complete the laying of the cable some time in the latter part of September.

At St. Louis, Senegal, this line will have connection with the Spanish submarine line.

The South American Cable Company has completed all its buildings at Fernando de Noronha and here. They have spared no expense. Their office in this city is elegantly and substantially furnished. Their electrical instruments and fixtures are of the best.

EDWIN STEVENS,
Consul.

UNITED STATES CONSULATE,
Pernambuco, August 23, 1892.

COMMERCE AND INDUSTRIES OF COAHUILA.

REPORT BY CONSUL FECHET, OF PIEDRAS NEGRAS.

GENERAL REVIEW.

The past year (from July 1, 1891, to June 30, 1892) has been one of large agricultural losses and of commercial depression throughout the State of Coahuila. Business men have ventured upon no new enterprises, but have carefully husbanded their resources, being well content if, happily, they might avert commercial shipwreck and maintain their credits unimpaired through a long period of depression. The conservative business methods that generally prevail have aided to minimize the usual consequences of dull times. At the beginning of this fiscal year, with the conditions then prevailing, not alone in Coahuila, but throughout a large portion of the Republic, a close observer would have foretold a dull and probably disastrous year of large losses.

With all other conditions most favorable, excellent public health, a stable and strong government, and consequent absence of hurtful political unrest and resulting abortive revolutions, Mexico should have made great advances along that new road of national progress and wealth upon which the Republic entered but a short decade since. Two chief factors have materially checked this progress during the past year. One of these factors, in the natural course, will disappear, and already bountiful rains of wide extent over the drought-stricken areas give presage and hope of abundant harvests in the coming year. The second factor is one beyond control of the Government of Mexico and is contingent upon so many complex causes affecting the whole civilized world that international conferences and resulting governmental legislation may alone bring relief. These two factors of depression and loss are the prolonged droughts and steady and heavy decline in the value of silver.

DROUGHT AND AGRICULTURAL LOSSES.

For several years prior to 1891 the rainfall in the States of Chihuahua, Coahuila, Durango, and portions of Zacatecas, Aguas Calientes, and Nuevo Leon was scant. In 1891 prolonged droughts prevailed over this immense range of territory and continued through the planting season of 1892. Famines and sore distress were only averted by the prompt and liberal action of federal and State governments in importing large amounts of corn from the United States, and selling it at actual cost to those having wherewith to buy, and distributing it to those without money.

The cost of these years of drought can not be estimated save approximately; entire crop failure in many districts, partial losses in other districts, heavy losses of stock on the great cattle and horse ranges, and the large sums of money at high rates for foreign exchange paid for corn from the United States are direct and computable losses. The indirect losses are far reaching and less easily reckoned.

At the port of Piedras Negras alone there were imported from the United States 23,575,820 pounds, or 420,996 bushels, of corn in the eleven months from August 1, 1891, to June 30, 1892. This corn came from Kansas City, Mo., and cost at the frontier an average of 70 cents per bushel in United States coin. This corn paid a duty of 1 cent per kilogram (2.2046 pounds). A decree of the Federal Government remits the duty from July 1 to September 30, 1892, and, in consequence, corn shipments from the United States will be large.

During the past month abundant rains have fallen throughout Coahuila and eastern Durango, late planting has followed the first welcome rains, and in many districts a late and much-needed corn crop is probable, as corn planted as late as the first weeks of August will mature in most parts of Coahuila.

The upland stock ranges are rapidly benefiting by the rains, and stockmen hope they have seen the worst of their troubles, as the young grass is coming on, and water holes filling up.

DECLINE IN SILVER.

Mexico's chiefest export is the product of her silver mines, whether as coined dollars, bar bullion, silver-lead bullion, or as silver in crude ores exported for treatment. The value of Mexican silver in all forms exported exceeds that of all her other exports. The total export of silver for the year ended June 30, 1889, was about $38,000,000. A very slight decline in the market price of bar silver means a serious loss when such large sums are involved, and this loss assumes most onerous proportions when the value commercially of the Mexican silver dollar declines from 79 cents to 67 cents in United States coin, as it has during the past year. This wide range in the selling price of the standard Mexican dollar has advanced the rate of foreign exchange from a premium of $1.25 to $1.50. Mexico is a debtor nation, buying more than she sells, and an advance in one year of 25 cents in the rate of foreign exchange has been severely felt by the people of Mexico. As a result, all foreign importations, from the necessaries of life to the luxuries, have advanced in price.

MINING.

Coal.—The Sabinas coal mines continue their large output and find in their markets, both home and foreign, a demand in excess of their capacity to fill orders. During the past year extensive developments and added machinery have marked the administration of these great properties. These coal mines have now been worked on a large scale a number of years and have completely established the presence of extensive coal measures in Coahuila. The total output of coal in tons of 2,240 pounds for the year ended June 30, 1892, was 153,999 tons, as against 105,350 tons the preceding year, and of coke 12,141 tons, as against 4,553 tons. Of this output of 153,999 tons, 55,781 tons, invoiced at $264,608 in United States coin,

were exported to the United States from this port. The commercial success of the Sabinas coal fields has stimulated explorations in other portions of Coahuila, and it is now well recognized that coal measures underlie the larger portion of the eastern half of the State and extend to and cross the valley of the Rio Grande into Texas. The high price and large demand for coal in Mexico will undoubtedly lead to the exploration and working of other coal properties in Coahuila in the near future. Already at the little hamlet of Fuente, 5 miles from Piedras Negras, an extensive and most promising coal property has been acquired by Mexico city capitalists. Preliminary work on a large scale has demonstrated the presence of valuable coal seams most admirably placed for economical mining. Hoisting works, tramways, and a spur completed to connect with the main track of the Mexican International Railroad are evidences of speedy development of the Fuente coal mines, and, with the Fuente coal output added to the large tonnage from Sabinas, Coahuila will maintain her present preëminence as the coal State of Mexico.

Precious metals.—During the past year, despite the low price of silver, there has been much mining activity in Coahuila. The mining districts of Monclova, Villa de Masguiz, and Cuatro Cienegas are gradually assuming importance. Many mines in these districts are now shipping ores to Monterey, Nuevo Leon, where the large smelters established in the past two years furnish a home market for fluxing and nonfluxing ores. The mining district of Sierra Mojada, in the extreme western and northern part of this consular district, is one of the great mining camps of Mexico. The completion of the railroad (Mexican Northern) from Escalon station, on the Mexican Central Railroad, to Sierra Mojada and the present rapid construction of a branch of the Mexican International from Monclova to Sierra Mojada will remove all obstacles to the greater development of this famed lead carbonate camp. The monthly output of the Sierra Mojada mines is about 10,000 tons. Formerly all this large tonnage of silver-lead ores was exported to the United States. At present less than 30 per cent goes to the United States for reduction, and the balance is shipped to smelters at Monterey and San Luis Potosi.

During the past year a consular agency under this consulate has been established at Sierra Mojada.

STOCK-RAISING.

Owing to continued drought, this industry has been much depressed. Large losses of stock from scant grass and lack of water has been the experience of most range stock-owners. In the cattle-raising industry a steady improvement over old methods is the rule. Ranges are being put under wire fence and subdivided into pastures, and graded stock is being imported.

Formerly Coahuila stock (cattle and horses) found their best market in the United States. Our prohibitive tariff on live stock has closed this market entirely.

RAILROAD CONSTRUCTION.

In September, 1891, the extension of the Mexican International from Torreon to Durango city was commenced. This important extension will have a length of 253 kilometers, or about 156 miles, and the total mileage of the main trunk line of the Mexican International from Piedras Negras to Durango city will be 870 kilometers, or about 540 miles. This extension will be completed and open for traffic in October of this year, and must have important results upon the commerce and development of Durango.

The Mexican International Railroad Company has also commenced work upon a line from Monclova, on the main line, to Sierra Mojada. This line will have a total length, entirely within the State of Coahuila, of 155 miles. As it will traverse several important mining regions, as well as the rich agricultural district of Cuatro Cienegas, and terminate in one of the leading mining camps in Mexico, this extension will prove a most valuable auxiliary to the main line. This line will be completed by the early months of 1893.

Concessions have been granted by the Mexican Federal Government for the construction of several other lines within this State, but no work has been done upon any of them save certain preliminary surveys.

EXPORTS.

The total value of chief exports to all countries from this port for the fiscal year ended June 30, 1892, as shown in tables herewith, is $2,632,171.22. For the past four fiscal years the corresponding values were as follows: In 1889, $1,734,281.73; 1890, $2,302,994.01; 1891, $2,494,955.51; 1892, $2,632,171.22. The gain in 1891 over 1890 was $191,961.50, and the gain of 1892 over 1891 but $137,215.71, showing a decrease in the rate of gain. The percentage of increase in 1890 was over 25 per cent; in 1891, a little over 7 per cent; and in 1892 it has fallen to nearly 5 per cent.

This annually decreasing rate of gain in exports to all countries is entirely due to causes that have solely affected Mexican exports to the United States, because Mexican exports from this port to countries other than the United States show astonishing gains. These causes are chiefly two, viz, our present tariff, which has diminished ore exportations and entirely stopped live-stock exportation, and a division of export traffic consequent upon the opening of the Tampico route. Formerly Mexican exports for the United States and Europe from the States of Coahuila and Nuevo Leon crossed the frontier at Piedras Negras or Nuevo Laredo. The construction of the Monterey and Mexican Gulf road from a junction with the Mexican International in the State of Coahuila to tide water at Tampico and the establishment of lines of ocean steamers from Tampico to United States and European ports have naturally caused competition and a partial diversion of traffic.

Table showing value of principal exports from Mexico to all countries through the port of Piedras Negras for the year ended June 30, 1892.

Articles.	Value.*	Articles.	Value.*
To the United States.		*To the United States*—Continued.	
Antimonial ores	$2,666.00	Skins and hides of animals:	
Animals of all kinds, domestic	1,196.00	Cattle hides	$20,746.00
Bananas	215.00	Goatskins	176,349.00
Beer	246.00	Seeds of all kinds	538.00
Boots, shoes, and leather	123.00	Sarsaparilla	135.00
Bread and biscuits	271.00	Specimens of natural history	122.00
Brushes manufactured of ixtle	459.00	Straw manufactures	124.00
Bullion:		Sugar, crude	1,690.00
Gold	2,961.00	Tin:	
Silver	12,752.00	Plate	111.00
Church regalia	177.00	In block	9,114.00
Cigars	303.00	Vegetables	395.00
Coal:		Watches and jewelry	156.00
Lump (bituminous)	175,771.00	Wines of all kinds	1,118.00
Screenings (culm)	778.00	Wood and manufactures of wood	296.00
Copper ores	4,268.00	Wool and manufactures of wool	275.00
Corn	111.00	Wool carpets	289.00
Cotton and cotton apparel	150.00	Miscellaneous articles under $100 in value	925.00
Cotton hosiery	851.00	Total to United States	986,887.00
Cotton-seed oil cake	3,961.00	*To all other countries.*	
Cotton waste ("linters")	6,034.00	Bullion, silver-lead	1,460,685.00
Drugs and chemicals	614.00	Copper:	
Earthenware, plain and decorated	1,081.00	In ingots	13,999.00
Fruits, fresh	274.00	Matte	12,919.60
Hair of animals	1,095.00	Goatskins	4,920.99
Hay and fodder	117.00	Ixtle	31,971.68
Household effects and Indian effects	3,907.00	Ores:	
Ixtle	32,061.00	Antimonial	4,011.00
Jute manufactures	239.00	Copper	37,489.60
Milk, fresh	106.00	Silver-lead	30,986.30
Metal manufactures	148.00	Silver	48,064.55
Nuts (pecans)	5,238.00	Sarsaparilla	236.50
Oranges	1,252.00	Total to all other countries	1,645,284.22
Ores (silver-lead and silver)	513,856.00	Grand total	2,632,171.22
Palm-leaf manufactures	413.00		
Palm-straw hats	193.00		
Paper manufactures	117.00		
Pepper, red	388.00		
Silk and silk manufactures	112.00		

*In United States coin.

Exports to the United States.—The chief losses in exports are on silver-lead ores, ixtle, live stock, and goatskins. The value of silver-lead ores exported to the United States in 1890 was $958,432; in 1891, $637,520; and in 1892, $513,856, less $63,990 worth of silver ores containing no lead and nondutiable. Exportations of live stock to the United States have diminished as follows: In 1890 the exports were $122,931; 1891, $15,873; 1892, under $1,000. Ixtle exportations to the United States in 1891 were valued at $79,496, and in 1892 at $10,519. As ixtle exportations in bond to Europe from this port have largely increased, this loss in value of ixtle exportations to the United States is due to more favorable markets for this valuable fiber in Europe. Goatskins exported to the United States in 1891

were valued at $194,164.76, and in 1892 at $175,924.80. This loss is entirely due to shipments via Tampico. The gains in exports to the United States are confined chiefly to coal, cotton-seed oil cake, pecan nuts, silver ores, and cattle hides. Coal exports increased $72,496.65; the exports in 1891 were 38,223 long tons, valued at $192,112.25, and in 1892 the exports were 55,781 tons, valued at $264,608.90. In 1891 there were no exportations of silver ores free of lead, and hence nondutiable; in 1892 there were shipped to the United States 171 tons, valued at $63,990.

The following comparative table, showing values of chief declared exports from this consular district during the past two fiscal years, embraces $393,140.11 from the consular agency at Sierra Mojada that entered the United States at El Paso, Tex.:

Table showing the value of the principal declared exports from the consular district of Piedras Negras during the fiscal years 1891 and 1892.

Articles.	Year ended June 30—		Increase.	Decrease.
	1891.	1892.		
Antimonial ores	$13,303.22	.....	.....	$13,303.22
Beans	3,878.13	.....	.....	3,878.13
Bullion:				
Silver	26,584.10	$12,915.24	.....	13,668.86
Silver-lead	116,577.11	.....	.....	116,577.11
Coal:				
Bituminous	192,112.25	264,608.90	$72,496.65	.....
Screenings	.....	1,266.22	1,266.22	.....
Coke	1,523.14	.....	.....	1,523.14
Copper matte	4,075.39	.....	.....	4,075.39
Cotton seed	.....	1,145.26	1,145.26	.....
Oil cake	3,074.89	7,155.68	4,080.79	.....
Cotton waste ("linters")	5,855.07	7,185.28	1,330.21	.....
Hats, palm straw	1,741.35	263.12	.....	1,478.23
Horsehair	4,259.09	743.57	.....	3,515.52
Ixtle	79,496.52	10,579.69	.....	68,976.83
Live animals:				
Cattle	3,117.88	.....	.....	3,117.88
Horses	5,520.28	.....	.....	5,520.28
Mules	3,502.65	.....	.....	3,502.65
Sheep	3,726.18	.....	.....	3,726.18
Nuts, pecan	.....	5,226.71	5,226.71	.....
Oranges	2,363.21	1,649.98	.....	713.23
Ores:				
Silver (free)	.....	167,954.58	167,954.58	.....
Silver-lead (dutiable)	365,031.78	536,356.82	171,325.04	.....
Proprietary medicines	1,070.33	589.82	.....	480.51
Skins and hides of animals:				
Cattle hides	17,309.56	20,749.12	3,439.56	.....
Deerskins	1,908.90	.....	.....	1,908.90
Goat and kid skins	194,164.76	177,168.08	.....	16,996.68
Hogskins	2,018.36	245.29	.....	1,773.07
Mixed skins	2,318.49	337.50	.....	1,980.99
Sugar, crude	1,613.91	948.51	.....	665.40
Unenumerated articles under $1,000 in value	5,116.97	2,285.54	.....	2,831.43
Total	1,061,263.52	1,219,314.91	428,265.02	270,213.63
Net increase	.....	.....	158,051.39	.....

Exports to Europe.—The total value of Mexican exports to Europe from this port in bonded transit through the United States for the past four fiscal years is shown in the table submitted herewith. This statement reveals an astonishing gain each year. In 1889 the total value of such exports was $377,041; 1890, $547,127; 1891, $1,068,718.75; and in 1892, $1,645,284.22. The total value of all exports to the United States in 1892 is $986,887, showing an excess in value of exports to Europe at this inland port over exports to the United States of $658,397.22, or, to more strikingly illustrate a condition so unfavorable to our trade with Mexico, 62 per cent of the total value of Mexican exports from this port was shipped to Europe and 38 per cent to the United States. Another feature to be considered is that the greater portion of this sum of $1,645,284.22 of Mexican exports sold to Europe is paid in European imports to Mexico. An examination of the table shows that the chief articles exported to Europe are 13,331,319 pounds of silver-lead bullion, valued at $1,460,685; 502,933 pounds of ixtle, valued at $31,971; 1,383,987 pounds of copper ore, valued at $37,489; 742,240 pounds of silver-lead ores, valued at $30,986.30; and 1,049,650 pounds of silver ores, valued at $48,064.55.

Table showing the exports shipped from the port of Piedras Negras through the United States in transit to European ports during the past four fiscal years.

Articles.	1889.		1890.	
	Quantity.	Value.*	Quantity.	Value.*
	Pounds.		*Pounds.*	
Bullion in silver-lead	7,531,304	$377,041.00	9,890,001	$543,993.35
Copper matte			31,950	1,597.50
Ixtle			40,588	1,537.00
Total		377,041.00		547,127.85

Articles.	1891.		1892.	
	Quantity.	Value.*	Quantity.	Value.*
	Pounds.		*Pounds.*	
Bullion in silver-lead	15,428,747	$936,272.49	13,331,319	$1,460,685.00
Copper:				
Ingots			114,696	13,999.00
Matte	357,512	29,897.00	202,560	12,919.60
Goatskins			13,824	4,920.99
Ixtle			502,933	31,971.68
Mohair	11,150	3,345.00		
Ores:				
Antimonial			194,008	4,011.00
Copper	457,340	10,745.23	1,383,987	37,489.60
Silver-lead	1,322,024	88,509.03	742,240	30,986.30
Silver			1,049,650	48,064.55
Sarsaparilla			3,730	236.50
Total		1,068,768.75		1,645,284.22

*In United States coin.

IMPORTS.

The table of imports from all countries shows a total value of $2,420,962, as compared with a valuation of $5,284,574 for the preceding fiscal year; this shows a total loss in importation to Mexico at this port of $2,863,612.

Importations in bond from all countries were valued at $889,718.76, as against a value of $1,054,467.69 for the fiscal year 1890–'91. The products of the United States shipped to this port in bond for benefit of customs drawback amounted in value to $51,068.45, as compared with $84,283, and consist chiefly of beer, sugar, petroleum, iron manufactures, and whisky. Deducting from the total value of importations in bond the value of $51,068.45, United States products in bond, and there remains for the value of European importations $838,650.31. The chief European articles of importation still continue to be steel rails, structural iron, machinery, drugs and chemicals, dyestuffs, aniline colors, paper and cardboard, hosiery; cotton, woolen, and silk goods; glassware, and shelf hardware.

To arrive at the value of importations from the United States we shall deduct the value of European importations from the total of importations from all countries; this will leave $1,582,311.69 as the value of United States exports entering Mexico at this port for the year 1891–'92, as compared with $4,314,389.79 in 1890–'91, a loss of $2,732,078.10. This very great loss is somewhat due to a diversion of traffic to other routes, but more largely due to the impoverished condition of Mexico through loss of crops and decline in silver.

A comparative study of the value of chief articles of import for the past two years shows that Mexico purchased less the past year than the preceding year of all lines of foreign articles classed as luxuries, while the increase in all lines of prime necessity is most marked. This may be well shown from the purchases of food products. In 1890–'91 Mexico purchased, through this port, food products valued at $238,098, and $375,811 in 1891–'92; and of this sum of $375,811, $235,757 were expended solely for corn to relieve the scarcity caused by crop failures.

The short cotton crop in Mexico is shown by the purchase of $448,970 worth of baled cotton, while in 1890–'91 but $228,789 worth was purchased.

The chief feature of loss in United States exports to Mexico is in live stock. In 1890–'91 we sold to Mexico live stock valued at $1,013,816 through this one port alone, and in 1891–'92 but $108,825, or a decrease in live-stock importations from the United States of $904,991. While all live-stock importations declined, the largest loss is on live hogs. In 1890–'91 53,453 live hogs, valued at $801,795, were entered at this port, and in 1891–'92 but 4,607 hogs, valued at $69,105. For this remarkable falling off in live-stock importations various causes are assigned; one cause is overstocked markets the former year and another the enlarged domestic output. The hog region of Mexico comprises portions of the States of Jalisco and

Michoacan, a region abounding in lakes, running streams, grass, and mast and whose chief agricultural product is corn. This region, within the past two years, has been given railroad facilities by the completion of branch roads from the main trunk line of the Mexican Central. The capacities of this region for hog-raising are undoubtedly very great, and it is claimed that central and southern Mexico can draw all supplies of pork, bacon, and lard required from Jalisco and Michoacan.

Table showing the value of imports from all countries at Piedras Negras for the year ended June 30, 1892.

Articles.	Value.*	Articles.	Value.*
Animal fats	$4,757.00	Paper and its manufactures	$33,447.00
Arms and ammunition	26,934.00	Saddlery	1,796.00
Boots and shoes	13,069.00	Silk:	
Building material (cements, etc.)	16,613.00	Manufactures	8,190.00
Candles, stearine and wax	7,955.00	Mixed with other materials	10,125.00
Cotton:		Starch	1,784.00
In bales	448,970.00	Stearine	5,371.00
Manufactures	290,881.00	Wagons, carriages, carts, etc	44,615.00
Drugs and chemicals	74,343.00	Wines and liquors	37,119.00
Earthen and glass wares	11,925.00	Wool manufactures	45,012.00
Food products	375,811.00	Articles unclassed	210,344.00
Furniture	8,752.00	Total	2,420,962.00
Leather:		Total in 1890–'91	5,284,574.00
Belting	12,772.00	Decrease	2,863,612.00
Manufactures	8,861.00		
Linen manufactures	5,320.00	Total imports from all countries in 1891–'92	2,420,962.00
Live stock:		Less European imports	838,650.31
Cattle	2,494.00	Actual United States imports	1,582,311.69
Goats	1,007.00	Actual United States imports in 1890–'91	4,314,389.79
Hogs	90,102.00	Decrease	2,732,078.10
Horses	13,577.00		
Mules	1,645.00		
Lumber and its manufactures	184,368.00		
Machinery	281,489.00		
Metals and their manufactures	141,514.00		

*In United States coin.

FRONTIER COMMERCIAL STATISTICS.

In former reports I have called the attention of the Department to the great need of adopting methods for collecting reliable statistics of our export trade with adjacent countries from our inland frontier ports. An experience of some years has convinced me that our statistical knowledge of what we sell to Mexico is only a shrewd guess, based upon such data as our collectors of customs may secure from export shippers and our consuls can obtain through the courtesy of Mexican customs officials.

This cloud upon the accuracy of our export statistics will be in a large measure removed under the operations of the act making appropriations for the legislative, executive, and judicial expenses of the Government for the fiscal year ending June 30, 1893. This act requires railroad companies to deliver to the customs officers at the last port in the United States through which the commodities pass into foreign territory a manifest for each car,

specifying kinds, quantities, and values of commodities contained in car under certain forms prescribed by the Secretary of the Treasury. This law is sufficiently comprehensive to secure accurate statistical data of railway exports, but it fails to take into account the large export trade between frontier towns on the border of the two countries. This export merchandise crosses the river frontier in wagons by bridge and ford and in boats. Under the law recently enacted collectors of customs at the frontier American towns can not require manifests to be filed at custom-houses showing kinds, quantities, and values, as in case of railway export shipments. The local trade across the Rio Grande frontier will aggregate a large sum annually, and should be known accurately to give our export statistics full value and credence.

The law recently enacted should be amended and enlarged in its scope, so as to compel the filing of a sworn list of all export shipments with the collector of customs at the last port on our frontier, whether exported in railway cars, by wagons, by boat, or any manner of vehicle.

EUGENE O. FECHET,
Consul.

UNITED STATES CONSULATE,
Piedras Negras, September 15, 1892.

WAGES AND COST OF LIVING IN MILAN.

REPORT BY CONSUL PEPPER.

In the last twenty-five years there has been much improvement in the wages of the working classes, especially in Lombardy. Ever since the unification of Italy their wages have gradually increased. One of the most striking evidences of this improved condition is the absence of beggars upon the streets—though wages are very low, they manage to get along without resorting to mendicancy.

A gentleman who came here from New York to purchase a glove establishment was surprised, when he made inquiry, to find that the glove-makers only received 50 cents per day for labor for which he paid $2.50, the hours being very much longer here.

An Italian who had just returned from the United States told me he was going to spend the remainder of his life in Italy. On being questioned, he said he had made enough in five years in the United States to keep him all the rest of his life in Italy. He was a laboring man.

I have frequently been asked to give some idea of the cost of living for Americans in Milan.

Many American students come here with the idea that living is cheaper than it is in the United States. This erroneous opinion is dispelled by a short experience of a few weeks. Many of the staple articles of food cost twice as much here, such as meat, tea, coffee, sugar (16 cents per pound), and butter. Fuel is dear, vegetables and fruit cheap. Servant hire is much cheaper here than in the United States. A good cook may be had for $6

per month. The highest wages paid to a servant are $10 per month, which is given to the housekeeper or butler.

To live comfortably and healthily one must pay $30 per month for board. One can not find board, even of the poorest quality, for less than $20 per month. This does not include washing, heat, or light. A family of three persons came here recently expecting to live on $60 per month, lessons included. They were surprised and greatly disappointed to find that board alone would cost them $100 per month. Even such board as this is poorer than they could obtain in the United States for the same money.

To live, as many Italians do, upon a limited supply and inferior grade of food, as is described in this report, is, of course, another thing. Indeed, I think it is scarcely possible for a foreigner to do it and retain his health.

Machinists and engineers receive from $1.40 to $2.50 per day. The workingmen of Italy work under a different system from that used in the United States. They work in small divisions of from three to four or six to eight men, according to the kind and amount of work. At the head of each of these small divisions is a skilled workman; the others are subordinates, and in many cases apprentices, and their wages are gauged according to the following table:

Table showing wages per day of eleven hours in Milan.

Occupations.	Wages.	Occupations.	Wages.
Building trades:		Other trades—Continued.	
Bricklayers	$0.60 to $0.70	Drivers—	
Hod-carriers	.30 to .40	Draymen	$0.30 to $0.40
Carpenters	.70 to .80	Cab and carriage	.50 to .60
Assistants	.40 to .50	Street railway	.80 to 1.00
Apprentices	.10 to .30	Conductors	.90 to 1.20
Plumbers	.80 to .90	Dyers	.50 to .75
Assistants	.40 to .60	Engineers	.50 to 1.00
Apprentices	.10 to .30	Farm laborers	.20 to .30
Stonemasons	.60 to .70	Furriers	.50 to 1.00
Assistants	.40 to .50	Gardeners	.50 to .75
Apprentices	.30 to .40	Hatters	.50 to 1.00
Roofers	.40 to .75	Laborers, porters, etc	.30 to .75
Slaters	.40 to .75	Lithographers	.40 to .75
Other trades:		Printers	.40 to 1.00
Bakers	.40 to .80	Teachers in public schools—	
Blacksmiths	.70 to .75	Principals	2.00 to 2.20
Bookbinders	.40 to .60	Assistants	1.00 to 1.20
Butchers	.60 to .75	Saddle and harness makers	.40 to .80
Boiler-makers	1.00 to 2.00	Tanners	.40 to .80
Cabinetmakers (skilled)	1.00 to 1.20	Mechanics (skilled)	1.40 to 2.50
Cigar-makers	.40 to .75	Tailors	1.00 to 1.60
Confectioners	.80 to 1.00	Apprentices	.30 to .75
Coopers	.50 to .75	Telegraph operators	1.00 to 1.50
Cutters	.75 to 1.00	Telegraph messengers	.35 to .40
Clerks	.30 to .75	Weavers	1.00 to 1.40
Distillers	.50 to 1.00	Shoemakers	.80 to 1.00

In the country skilled bakers receive, besides their wages, breakfast and dinner. Their food consists of vegetable soup and a pint of wine, with all

the bread they wish. On Sundays they have meat twice, with a pint of wine for breakfast and a quart for dinner. Also, every workman, be he skilled or not, receives a fee of 20 cents.

The city bakers work under an entirely different system. They receive no food, but work together in small groups or divisions, each division using in common one oven; therefore, the proprietors of large bakeries engage as few of these groups as possible, so as not to have to pay for extra fires. They are provided with everything necessary for making the bread, and each division is paid 70 cents for every 215 pounds of flour which they bake. The head baker of each division is paid weekly or monthly, according to the amount of flour each group has baked, and a division of the money is made between them according to prearrangement. This system gives them average wages of from 40 to 80 cents per day. The apprentices are supplied by the proprietor, and do not enter into the groups.

In addition to their daily wages, butchers receive meat three times a week, and also the tendons, etc., which can not be sold in the shop. These they sell, and from this source their wages are materially augmented.

The highest salary paid to a clerk in one of the largest dry-goods establishments of Milan is $300 per year. In some of the larger establishments the clerks receive their breakfasts (at noon) in addition to their wages.

As a rule, each farm hand rents for himself about 2 acres of land and a one-room house; if the house has more than one room, more than one family occupy it. For this house and ground he pays a yearly rent of about $10, and upon this ground is raised nearly everything that he and his family have to eat. It must be cultivated at night after his day's labor is over or by his wife and children. The different "farm hands," with their families, live close together and form a kind of small colony. Each colony will often own in common a cow, which they all help to feed, and the same may be said of any other animals they own. The milk of the cow is divided among them; some use it and others make butter of their share and sell it. Meat is eaten by these people once a month, and they have a glass of wine on Sunday only. When these farmers make cheese, which is once a year, they borrow the milk of all their neighbors with which to make the cheese, and the next person who makes cheese is paid back as many liters of milk as were borrowed from him. In this way each family is enabled to make its cheese for the year.

The laborers of Lombardy are industrious and thrifty, but, as far as I know, none of them are owners of land.

Although it is generally believed that rents are lower in Europe, I find, upon investigation, they are as high here as in the United States. For three rooms, generally up several flights of stairs, the price is from $60 to $70 per year. In this city of nearly 400,000 inhabitants there is not a workingman who owns his house.

The farm laborers are paid much less than those who work in the city. In summer, for about two months during the harvest, they receive 80 cents

per day, but in the winter they receive much less. Their working day commences with sunrise and closes with sunset. The workers in the rice fields usually get from 8 to 15 cents per day.

The kind, quality, and quantity of food eaten by these people is greatly governed by circumstances, viz, the amount of wages earned, whether single or married, large or small family, whether the wife works or not, whether the children work, etc. The poorest class of workingmen eat for breakfast (at noon—they have no morning meal) corn-meal mush. The dinner is composed of a vegetable soup, called "minestra." For a family of six they use a piece of lard about 2 inches long, water, and a conglomeration of every kind of vegetable obtainable, such as potatoes, carrots, cabbage, peas, beans, spinach, tomatoes, etc. Instead of lard, sometimes salted pork is used. It is the favorite dish of the poorer classes of Lombardy. After this is eaten any quantity of salad, seasoned always with salt, pepper, oil, and vinegar. Bread is eaten with the salad. The Italian workmen drink a great quantity of wine for breakfast, as well as for dinner, necessarily of a very inferior quality. The father of the family takes his bowl of vegetable soup to a fifth-rate restaurant, called an "osteria," and buys for himself a portion or a half of meat costing from 6 to 8 cents, and takes his half bottle of wine also, while his wife and children remain at home with their bowl of soup. Cases of this kind are to be seen every day, the wife often requesting the husband and father to do this, as he is supposed to be the hardest-worked member of the family.

Although their condition is much below that of the employed in our country, strikes are very rare in Italy. This may arise from the great difficulty the workingmen have of securing coöperation among themselves, arising from the number of provinces each with its own characteristic economical condition. Children, by the law of Italy, are not permitted to work between the ninth and tenth years. Many of the laborers prefer an advance in moderate wages to a reduction of the hours of labor. No serious movement looking to shorter hours has been inaugurated here.

GEO. W. PEPPER,
Consul.

UNITED STATES CONSULATE,
Milan, September 6, 1892.

ENGLISH HOPS.

REPORT BY CONSUL-GENERAL NEW, OF LONDON.

Referring to instruction of July 23, 1892, I have the honor to inclose herewith a copy of the Brewers' Journal of September 15, which contains complete information on the acreage and condition of the hop crop of Great Britain.

JOHN C. NEW,
Consul-General.

UNITED STATES CONSULATE-GENERAL,
London, September 16, 1892.

BRITISH HOPS.

[Inclosure in Consul-General New's report.—From the Brewers' Journal.]

The following table shows the imports of hops into and exports from the United Kingdom from September 1, 1891, to August 31, 1892, inclusive, as compared with those in the two former years:

Description.	Months of September to August.			Month ended August 31—		
	1891–'92.	1890–'91.	1889–'90.	1892.	1891.	1890.
	Cwts.	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*	*Cwts.*
Hop imports	204,282	175,506	209,874	2,026	3,969	9,601
Hop exports:						
British	5,596	4,804	10,570	172	223	131
Foreign	5,059	3,623	9,198	69	396	28
Total	10,655	8,427	19,768	241	619	159
Value of imports	£947,764	£1,007,739	£691,175	£9,931	£19,879	£27,403
Value of exports:						
British	38,516	52,521	45,224	1,192	1,659	551
Foreign	27,433	28,071	28,847	289	2,120	90
Total	65,949	80,582	74,069	1,481	3,779	641

The season 1891–'92 has finished up with very trivial imports of hops, and the year's total still falls short of that in 1889'–90. The last month's exports were also a mere bagatelle, and, while those for 1891–'92 were larger than in 1890–'91, they were much below the shipments hence in the previous year.

Hop News.

The fine, bright, and hot weather which prevailed from the 12th until the 18th of August and several days subsequently, though not continuously, taken in conjunction with the thunderstorms that marked the latter half of the month, did an immense amount of good for the hop crop, the hot sun and intense heat bringing out the bur and turning it into hops, and the storms of thunder, lightning, and rain cleansing to a great extent the foulness caused by the heavy and most persistent attacks of vermin. But, unfortunately, during the last nine or ten days of the month there was a great deal too much wet for hops, as well as the corn, and the temperature underwent many sudden changes, which, together with the excessive moisture, assisted the spread of mold, against the inroads of which sulphur was found of little or no avail, as it was washed off almost as soon as put on. Then, too, there has been a series of strong gales from the southwest, which have wrought very serious mischief in many grounds, particularly those that had not been well protected on their southern and southwestern sides. Day after day the wind blew with the force of a moderate to a furious gale, and every plantation suffered more or less. The effect of the injury was most marked in the Goldings and other late sorts, which just at that time required nice, warm, still weather. The consequence has been that they have not developed in the way that they ought to have done, though the Goldings, taken as a whole, are a decidedly better crop, both in quantity and quality, than they have been for the past two or three seasons.

As we predicted would be the case, the 1892 crop is one of very variable quality, and mold has contributed even more than aphis blight to the deterioration that such a large proportion of the samples show and will yet show. The vermin attack, though a most serious one, was successfully grappled with by most planters; but in many instances we find that either no washing was done at all, or, if done, was undertaken much too late, when it did more harm than good—injuring the cones without destroying the lice, which had already made their way

into the hops. A good deal of benefit resulted to the badly smitten and unwashed gardens by the broiling heat of the middle of the month, the sap being driven back and the vermin, deprived thus of sustenance, dying off. The lightning that was so very prevalent during the storms also killed a lot, while the drenching rains washed the upper part of the bine fairly clean. But nevertheless many grounds were partially blighted, and, in order to save the hops from total destruction, they had to be picked before they had arrived at maturity. As we have said, mold has seriously affected a considerable proportion of the crop. Happily, however, the ravages of this disease are not so extensive as in 1890, and we could point out many grounds in which, even without any sulphuring at all, and in others with only one or two applications early in the season, large and beautiful crops have been secured entirely free from mold. With regard to the probable production this season, we think it will come out the same as, or pretty nearly equal to, that of last year. The acreage, according to the agricultural returns collected on June 4, is 56,263 acres—only a slight increase on 1891, but 2,302 acres more than in 1890. Of course, there will be some grounds left unpicked, as there invariably are, but compared to 1890 the number of acres passed over will be small indeed. In that year many large plantations were hopelessly ruined either by blight or mold or by both combined. Things are not nearly so bad this season. The blight was undoubtedly stayed by the cool weather that set in about the third week in August. Had it continued hot, with scorching sun, the badly infested gardens must have succumbed; but, as it was, the hops in these cases kept fairly well, and, having good condition in them, they have in most instances been picked. Nor has mold been so frightfully prevalent as in 1890, although sufficiently serious to make its mark only too evident in the samples. Latterly, too, red mold has appeared and has done much mischief.

Picking was commenced in the early sorts—Prolifics, Hobbs's, Seale's Early Goldings, and the like—about August 25, and from that date it gradually extended, becoming pretty general in Kent and Sussex by the first week in September. Many of the big growers have had large numbers of pickers employed; but, the corn harvest being in full swing at the same time as hops were ready for picking and the two harvests having to progress simultaneously, the ingathering of the hop crop is likely to extend down to the end of September, if not running into October.

KENT.

This county will produce, on the whole, an average crop, with a good proportion of first-class quality. Where sound and healthy, the hops are quite exceptional in color and strength—probably as fine as ever grown. We shall record the results that have come under our notice in as nearly a connected order as to districts as can conveniently be done, but, except that we shall keep the three hop districts—East Kent, Mid Kent, and the Weald—separate and distinct, we will not pledge ourselves to accuracy in respect of the order in which we may place the different parishes, though as a general rule they will run fairly regular.

Around Canterbury there have been large and, in the main, fairly good crops. At Harbledown Mr. Barnes and Mr. A. Warde have done well; and they deserved to do well, both having farmed high and washed repeatedly. Their Bramlings are fully grown and of fine quality. Some of their largest pieces must have yielded 12, 14, and 15 cwts. per acre, and their later hops look like coming down equally heavy. Their average all through will be a good one. Mr. Barnes is a very large grower, not only in this parish, but around Chilham, where he also has a splendid crop. As stated in a previous issue of the Journal, he takes over at Michaelmas the extensive hop farm of Mr. Warde, so that he bids fair to become the largest grower in East Kent. Mr. T. Sidney Cooper's plantations at Harbledown have also come out very satisfactorily, his Bramlings running at places from 12 to 15 cwts. per acre and his Goldings being a larger crop than for several years past. Picking was commenced in this parish on the 26th ultimo, and will go on for at least another fortnight. Mr. T. G. Peckham, Mr. Dunkin, and Mr. Homewood have successfully overcome the attacks of vermin and grown good crops, though the results in regard to quantity did not, perhaps, reach the estimate put upon the hops before they were picked. Generally speaking, the crops at Harble-

down looked heavier than they have turned out to be, and this may probably be the case with the later sorts on Mr. Barnes's, Mr. Warde's, and Mr. Cooper's grounds. Over at Mayton, where Mr. Neville Cooper has a well-managed hop farm, the Bramlings are excellent. At Tyler Hill and St. Stephen's Mr. G. Whiteman, another successful cultivator, has reaped his reward in a splendid growth of true Bramlings and Goldings, most of them grown on the wire-and-string principle, as, indeed, are the bulk of the hops in the Harbledown district. Heavy and sound growths are being secured from the famous and very extensive grounds of Mr. Charles Neame at Suppington and Merton, to the south of Canterbury. We should estimate these plantations at 14 cwts. per acre. Except on the higher ground, the hops were not much damaged by the gales, though, of course, they would have been better without the knocking about that they sustained. Not far off from these plantations are those of Mr. T. L. Collard on one side and those of Mr. G. B. Gipps on the other. Here, again, there are good crops, and quantity, on the whole, is satisfactory, though we were assured that, compared to estimates formed before picking, they come down light.

We shall now, before dealing with the district that lies east and northeast of Canterbury, take a look at a number of parishes that we inspected in the course of an entire day's tour. We commenced at Nackington, close to Canterbury, on the Petham road. Mr. T. L. Collard and Mr. George Mount began picking the first week in September, but progress was slow owing to the rain. Some of the more matured Bramlings were got down before the worst of the gales came, but a lot of damage was done to a considerable portion of the grounds. It was clearly visible on the first fine day that succeeded, the hops on the most exposed sides of the grounds being very brown. On the whole, however, the results have been satisfactory; quality wonderfully good. Mrs. R. Collard's gardens at "Sextrees" were next visited; these had not been washed at all, though they had been otherwise well done. The hops were found to be full of condition, and one piece of Bramlings presented a very bright appearance. Next we saw Mr. J. Baker White's well-managed plantations at Street End; these will come out well on the whole. Going on to Lower Hardres, we look at Mr. Cephas Maxted's grounds, half being devoted to Bramlings and the other half to Goldings. Picking was begun early, though it made but little progress until the second week in September, owing to the continued heavy rains. This was, we think, an advantage, as by keeping a few days longer the hops gained in brewing qualities. The fearful gales have considerably reduced the quantity of sound hops. Col. Laurie's grounds, a little further on, have been well cultivated, and the quality is good on the whole. We saw some small pieces in this parish which, not having been washed, were turning black. Next we inspected the grounds of Mr. Charles Hammond, at Swarling, Mr. T. Knight, and Mr. H. R. Mackay, all in the adjoining parish of Petham. There is an average growth in each case, and where they have escaped bruising by the gales and where the vermin were cleared off quality and condition are good. Mr. Knight's stringed ground presented a pretty appearance. Picking was commenced on the 3d and 5th at Petham. There was very little mold to be seen. Through the Kenfield estate the hops vary in point of quality. Mr. Pilcher has some good ones, and very fair growths have been obtained from the grounds formerly farmed either by the squire of Kenfield (the late Mr. Thomson) or his tenants and now superintended by Mr. G. Webb, the agent. At South Petham and Waltham Mr. W. H. Hammond has managed to get a nice crop without washing. Asked why washing is not done in this district, he informed us that it is simply on account of the difficulty of getting water there. It is as much as farmers can do to get enough for their stock, so that they are absolutely debarred from washing their hops. In some instances the effects of vermin in the cones were only too apparent. It is the old Goldings principally that have been blighted. The parishes of Chartham and Chilham were next visited. Several plantations presented a very dark appearance—almost black. We knew what this meant, and breaking open some of the hops we found lice very lively. At Chartham the grounds of Mr. Arthur Finn are good; he has washed repeatedly and vigorously and cultivated well. Mr. W. Harvey (Thruxted) and Mr. Colthup will get a fair lot—quality and condition good. At Chilham Mr. J. H. Harvey and Mr.

John Day have some healthy grounds, having washed and cultivated well. The gales have sadly knocked all gardens about, and the damage thus caused must reduce the quantity. Grounds that have not been washed have shared the same fate as elsewhere; mold has also affected the quality at places. In the same neighborhood Mr. Barnes (the great hop-grower of Harbledown) has a splendid crop—equal in quantity and quality to any in East Kent. We should estimate the crop from all the parishes comprised in this day's tour at 8 or 9 cwts. per acre. Coming on from Chartham back to Canterbury, we pass the grounds of Mr. Corrie, at Horton Chapel; Mr. T. W. Palmer, at Milton Chapel; Mr. G. B. Gipps, at Howfield; Mr. Wood, at Cockering; and Mr. Leggett, at Thanington Court. Though there are good hops in each, it is the Howfield plantation alone that claims special notice, and here the crop is superb, no expense having been spared to produce it. Under the management of Mr. Reynolds the grounds have been cultivated in the very best manner and the plants washed from the first appearance of "fly." The advantages of the wire-and-string principle of training over the old-fashioned pole system have again been abundantly proved. The hops not only keep healthier and grow out better, but when gales come the damage is comparatively slight.

We may now conveniently deal with the Ashford, Sittingbourne, and Faversham districts—the three largest and most important districts in East Kent. First, as to Ashford district, or South Kent. The famous plantations at Hinxhill (Mr. G. C. Rolfe's) are producing a big and fine quality crop. Wind has bruised them at places, but otherwise the hops are sound, bright, large, and full of condition. Other grounds in the same parishes will give a variable crop, blight and mold affecting the quality. In Wye and Boughton Aluph parishes most growers have washed and sulphured well; but, although the best grounds have been kept clean and healthy, there are some in which the lice got into the cones and turned them (as it is called) "black at the core." The most successful cultivator here is Mr. Alfred Amos, who has thoroughly deserved the good crop he has got, for he has paid more attention to his grounds than anyone else for miles around. His system of cultivation is admirable. He not only strips off the lower leaves and branches, but has all the big leaves taken off all the way up, so as to admit the light and air. Other leading growers in these parishes also deserve to be complimented upon the way in which they have "gone for" a crop, which happily they have got. They will all do better even than last year, though the general average of the two parishes will be a low one. Hopes are entertained that the late hops in Wye parish will be good, though not equal to the expectations formed before the tremendous gales. The average for the district will be about 9 cwts. per acre. Aphis blight has been severe around Ashford town and at Kingsnorth, but some gardens are clean and healthy. At Pluckley and Little Chart Sir Edward Dering and Maj. Cheesman are favored, while other growers will fare rather badly unless the late kinds do better. At Westwell, Eastwell, and Godmersham some of the hops were picked before they were ripe; those that have been allowed to hang have grown out larger and, although a little browned, are full of condition. At Sevington Mr. T. Chapman has again had good luck—that is, by working for it. The Sevington crop, it is estimated, will average 15 cwts. per acre, though some have set it much higher. In the adjoining parish of Willesborough there will be 8 to 9 cwts. per acre. At Charing the crop is a moderate one of varying degrees of quality. The parishes that comprise the No. 2 district of South Kent, in which second-rate East Kents are mostly cultivated, have crops ranging from 5 to 12 cwts. per acre. In many instances white mold is present, and since the picking was begun red mold has made its appearance, and it is feared that many acres will have to be left unpicked. The gales, too, have played sad havoc, destroying what was previously, in many instances, a splendid outlook. Fuggles are pretty fair, but not on the whole so good as they promised to be in July. Picking was commenced at the end of August and the beginning of September and will not be completed until the closing days of this month. With regard to the Sittingbourne and Faversham districts, the tale is pretty much the same as elsewhere—well-farmed grounds and well-washed pieces are giving forth excellent crops—large growths of clean, bright hops, though tinged here and

there through the bruising caused by the gales, and not wholly free from mold. Neglected grounds, on the other hand, are bad; some discolored by blight, others seriously affected by mold. Around Sittingbourne we found capital growths on Mr. H. T. Bensted's stringed grounds at Teynham, the Messrs. Wakeley's at Rainham, Messrs. Honeyball's, and Mr. Manwaring's. These planters have worked hard all through the season to obtain sound and healthy growths, and but for the extremely bad weather at the beginning of this month they would have had the largest crops of any in East Kent. Some badly blighted and moldy gardens in the Sittingbourne district will be left unpicked, and serious losses will be sustained by the unfortunate planters. The best grounds in the Faversham district are at Ospringe, Graveney, Macknade, Preston, Sheldwich, Selling, Boughton, and Dunkirk. All the leading growers have washed several times, beginning at the latter part of June and continuing right down to the last week in August. Mr. W. Miller, Mr. S. Miller, Mr. G. W. Finn, Mr. L. Ashbee, Mr. H. Amos, Mr. F. Neame, Mr. Edwin Neame, Mr. W. W. Berry, Mr. John Marten, Mr. H. A. Neame, and others have succeeded in producing more or less heavy crops of Bramlings, free from vermin and mold; but there is not a ground that does not show the effects of the fearful gales. In numerous instances the blight has not been overcome, and the bine has gone nearly black, which, of course, means deterioration of the hops.

Picking in Mr. Gipps's well-managed plantation at Howletts (Bekesbourne) was begun at the end of August. We never saw better-grown Bramlings than we had the pleasure of seeing here, and there are very few grounds in East Kent that can beat this. We understand that washing was begun in June and was kept up at intervals until the middle of August, not one or two, but seven or eight, machines being employed on each occasion. The result was that by the time the hops were forming it was a difficult matter to find even a single louse. Mr. Gipps is the owner of the farm, and the farm is in his own occupation under a thoroughly competent hop manager. No expense is spared, and when picking time arrives people are got together from far and near, so that the crop can be gathered expeditiously, instead of the work being spread over many weeks and a lot of the hops being allowed to run off because they can not be picked at once. Another farm of Mr. Gipps's is at Howfield, on the Ashford road, within a short distance of Canterbury. Here also, as already stated, there is a splendid crop, grown upon the same plan as that adopted at Howlett's, namely, the wire-and-string principle on the latest and most improved style, by means of which the hop-bearing branches can sustain but little damage by gales, no matter from what quarter they come. There is a plantation on a similar plan at Littlebourne, that of Mr. J. D. Maxted, who also has a magnificent crop, particularly of Bramlings. Other favored growers at Littlebourne are Mr. Montague Kingsford, Mr. David Collard, and Mr. D. T. Smith. The well-sheltered ground of the Marquis Conyngham, in the old lane leading from Patrixbourne to Canterbury, which has been a hop garden from time immemorial (there is no one living in the parish who knows how long ago it was planted), has come out well again, thanks to excellent management and cultivation. We should think that the several grounds we have mentioned in this paragraph will average 10 cwts. to the acre of sound hops. Mr. W. Gardner, Mr. B. W. Tassell, and Mr. Charles Collard (Patrixbourne and St. Paul's, Canterbury) have nearly finished picking. Mr. Gardner and Mr. Tassell had some good and some bad hops, but where right the quality is excellent. Mr. Collard washed his grounds repeatedly and completely mastered the insect enemy. His Bramlings were a capital crop, but did not come down so heavily as they looked, as they were estimated from 1 to 2 cwts. per acre more than they actually came down at. At Bishopsbourne and Bridge the grounds that we have inspected are those of Mr. Matthew Bell, Lord Conyngham, and Mr. H. R. Peckham. These, considering the season, are fairly good, but there was much damage done by gales. Some moderately good growths will come (from parishes around and near Canterbury) from the grounds of Mr. Chapman, Hoath Court; Mrs. Baker, St. Stephen's; Mr. Scott, Sturry; Mr. Ingleton, Tyler Hill; and good lots from Mr. T. Wotton, Sturry; Earl Cowper, at Hoath; Mr. Douglas Collard, Stodmarsh; and Mr. Spencer Collard, Ickham.

In the Wingham and Ash districts there will be a nice lot of Bramlings from a great many grounds and a better crop of Goldings than has been produced for the past two years, though the wet, boisterous, and cool weather lately experienced has prevented them from growing out in the way that they promised doing. The parishes of Goodnestone, Wickham, Ash, Staple, Guilton, Woodnesborough, etc., will give an average outturn. The most successful growers this year in and around Ash-next-Sandwich are Mr. Walter Petley and Mr. Woodruff, and at Woodnesborough Mr. F. Neame. These planters have been unsparing in their efforts, both in respect of cultivation and washing, nothing being left undone to produce large and healthy crops. Mr. Petley in particular is to be commended; his two grounds at Staple and Guilton are striking examples of thorough and systematic treatment. One of the oldest and most practical of East Kent hop-growers is Mr. Harvey, of Each, near Sandwich. He can recall all the good and bad seasons for forty years, and the present one he regards as the most trying and anxious of all. He has some very good hops himself and some that he is very much dissatisfied with, though he frankly admits that it was his own fault, having put off washing until too late a period. Mr. Elgar, Mr. Robinson, Mr. Miles, Mr. Plumptre, Mr. Kelsey, Mr. Nethersole, and others have done fairly well.

In the Isle of Thanet a few large and good crops have been grown, but the damage done by the gales has been most disastrous, only those grounds that were securely protected by cloth on the outsides escaping the worst effects. Where at all exposed the poles were blown down and strings snapped, while the lashing and bruising knocked the hops about cruelly. Besides aphis blight, much deterioration of quality has been caused by mold, which is always a serious trouble in this district in wet, cold weather. The Thanet crop will be a variable and disappointing one.

There are other portions of East Kent that one would like to write about; but we have already devoted so much space to the premier districts of the country that we must pass them over with the general observation that where they are healthy and strong the hops are magnificent in quality, while in cases where aphis blight and mold were allowed to get the mastery the results are very disappointing. Mold has spread rapidly since the beginning of this month.

Turning our attention to Mid Kent, we must first notice the parishes of Boxley, East and West Farleigh, the Barmings, the Suttons, Capel and Paddock Wood, Brenchley, Lamberhurst, Yalding (already incidentally mentioned in connection with Marden, in the Weald, which parish it adjoins), and the Tudeley and Tunbridge districts. In all these places, although there are badly blighted gardens—gone bad through utter neglect or careless management—the crops, generally speaking, will be large in quantity and of good quality. At Boxley the growths are from 10 to 12 cwts. per acre, even after making allowance for the destruction caused by the gales. The early sorts might, it is true, be better in respect of the size of the hops, but the Bramlings and Goldings are not only heavy, but, on the whole, of excellent quality. Most of the growers washed repeatedly, and their hops are quite free from vermin. We think that the old Goldings grown here will be hard to beat anywhere in Kent. At the Farleighs the grounds that for many years were so successfully cultivated by the late Mr. Herbert Ellis, those of Mr. Herbert Lenley and Mr. Ambrose Warde, although much damaged at places by the boisterous winds, are giving capital results. What the average would have been if there had been no gales we need not stop to speculate about, but even as it is the yield is a big one, while the quality, owing, of course, to the splendid cultivation and the persistent washing, is first class. Goldings are largely grown in these parishes, and for once in a while the crop of these choice hops will be a very satisfactory one. Other good sorts are also very satisfactory both in quantity and quality. In the other parishes we have named there are also large and good quality growths. Mr. T. H. Oyler, Mr. J. T. Best, Mr. W. R. Tompsett, Mr. T. Manwaring, Mr. F. Dean, Mr. C. Hammond, Mr. W. Noakes, Mr. James Hartridge, Mr. Children, Mr. J. Abrey, and several other leading growers have been rewarded for their pains, and, let us hope, will be repaid for the money they have expended, in order to grow hops that shall be a credit to their respective districts. They

have had undoubtedly one of the most trying and anxious seasons on record, and it is disheartening to look upon some gardens that have turned out simply awful; but one has to consider the general and not an individual result, and, speaking of these parishes generally, it is a source of great satisfaction to be able to say that the crops are large and good, especially after the fearful weather lately experienced. In the Tudeley and Tunbridge districts the growths in the best grounds will range from 12 to 15 cwts. an acre, and, though somewhat off color at places, the quality, on the whole, will be sound and rich. The Colgates, a late sort, promise to be better than of late years, but they will not be of good quality unless the weather favors them. East and West Peckham, Nettlestead, Lenham, Linton, Loose, and Boughton Monchelsea, Aylesford and Ditton, Langley, Mereworth, the Wrotham district, Bearsted, Wateringbury, Fawkham, the Rochester district, and the Crays, will produce fair crops on the whole.

The Weald of Kent will have a very variable growth, in quantity ranging from 4 to 15 and perhaps 16 or 17 cwts. to the acre and in quality varying from most inferior to the best of the year. It has been a fearfully trying time with the majority of growers. The aphis visitation was one of the severest ever experienced. Mold has been exceedingly troublesome in many places; the grounds have been soddened over and over again by the tropical rains of August, and the storms and gales have been terrific. At Headcorn we found that a considerable proportion of the hops had already been gathered, and the samples we inspected at the oasts were fairly good; there was capital condition and plenty of "gold dust," though the color was not particularly good. The hops that were being picked on the occasion of our visit showed the effects of the gales very markedly, but here and there a piece could be seen that looked very bright and healthy. The parish will yield more than in 1890, but not so many as last year.

At Cranbrook and Sissinghurst the crop promised towards the close of August to be quite equal to that of 1891, and the grounds that had been thoroughly and judiciously washed looked like turning out from 15 cwts. to a ton per acre. The continuous rains from August 28 to September 2 and the gales between those dates played havoc in many gardens, especially where the hops were weak through the blight (not having been washed) and where mold had struck them. The result will be a crop under that of last year, and the diseased hops will show up too prominently in the sample. The Prolifics have been heavy, but a lot of these were picked before they were ripe on account of mold. At Benenden there are some exceptionally good growths; indeed, the entire parish has been rather favored, and the best-farmed grounds, like those of Lord Cranbrook for instance, have produced a splendid lot of hops; at places, however, mold has done some damage, and some of the hops, though looking exceedingly well on the outsides, when examined have been found to contain lice in an active and thriving condition. In and around Biddenden sulphuring has had to be done repeatedly, the mold having been very threatening. Washing also was carried on repeatedly at several places. We saw some good pieces at Bishopden Farm and at Hanmer's Mill, which looked like doing 14 to 15 cwts. per acre; also at Omenden and neighborhood, where from 10 to 12 cwts. of clean, healthy hops will be secured. In Rolvenden parish, where the hops have been well cultivated and the blight was kept under, the crops are very fair, but mold has been too rife in places. At Marden and Yalding the plantations have kept pretty healthy, thanks to good farming, copious washing, and frequent sulphuring. The gales have done more damage than anything else, and on the outside parts of the grounds the hops are very brown. The early and hardy sorts so extensively grown in these parishes have been heavy crops. Successful results have been obtained by the leading growers, particularly Mr. T. Hartridge and Mr. S. Day, who have, as usual, done everything that possibly could be done to keep their grounds healthy. At Hawhurst the best farmers have got the best hops. The growth throughout the parish is about an average; quality very variable. At Tenterden the Fuggles have come down well and are, generally speaking, a very healthy, well-conditioned crop. In many grounds, however, the damage done by the

gales and mold is serious, and brown samples will be plentiful. A large quantity were secured before the worst of the gales came, and these are exceedingly fine in quality. It is seldom that Fuggles grow to the size they have done this season at Tenterden. In the parish of Smarden the results of good farming and washing from an early stage of the aphis attack are seen in heavy and healthy crops. Gales have played havoc in unprotected grounds, and did not, of course, improve the condition of the crop anywhere. Some of the grounds in this parish have not done much; but, generally speaking, Smarden comes out exceedingly well—if not the best, certainly one of the best, of the Weald parishes. In Staplehurst parish, and also at Frittenden and the neighborhood, picking became general in the first week of September. The coarser sorts are fairly healthy and have come down heavy; later kinds have suffered much from the bad weather and mold. At High Halden the crop is "spotty," mold being very troublesome in the old plantations. The parish of Goudhurst is decidedly favored, especially in respect of the early sorts, which have come down very satisfactorily. It was estimated prior to the gales that the crop generally would beat the record; but this will not be the case now, though it will be a very big crop.

SUSSEX.

The producing districts of Sussex vary considerably, as might be expected in a year like this. In the Rye district (around Rye Union, Ore, Winchelsea, Peasmarsh, etc.) picking was begun among the early sorts at the end of August. Some grounds are clean and healthy, and the growths are quite up to the average. In others the hops are hopelessly blighted and present the same wretched appearance that they did in 1890. Happily, there are not so many blighted gardens as in that season. Towards Hastings we found a few very bright and well-cropped pieces. At Hurstmonceux the unprotected gardens suffered sadly from the August-September gales, and the hops have not grown out well since. Mold, which was already troublesome, became serious after the wet weather, being further encouraged by the low temperature. On the whole, however, there is a good growth of hops. At Salehurst and Mountfield there is a fair average in the best grounds, but blight and mold have marred the quality of the crop in others. Fuggles, Goldings, and Jones's are grown extensively in and around Ticehurst, and a lot of these were picked before they had arrived at maturity, in order to save them from "going off," lice having lodged themselves in the cones, and others being touched with mold, which took a fresh start after the heavy, cold rains. Washing was done by all the leading growers, but it did not in every case clear the whole of the vermin off. Some of the Fuggles grounds are yielding heavily—10, 12, 14, 15, and 17 cwts. to the acre, the entire district averaging between 7 and 8 cwts. round. Needless to say, the gales did an immense amount of mischief, but not so much in the stringed as in the unstringed plantations. The advantage of training hops on the string-and-wire principle has never been more clearly demonstrated than this season, and we were glad to find that many who had hitherto been skeptical about it have now been converted and will next season adopt the stringing method. In the parish of Burwash we saw a big crop of Fuggles on Mr. Wickham's farm; the hops were clean, bright, and fairly well grown out. We may also favorably mention the hops of Mr. Jesse Piper and Mr. Manwaring. The Colgates in this district were checked in development by the extremely cold weather that followed the heavy rains and gales; but they still promise to be a better crop than of late years, provided the mold does not get at them. The higher temperature at the close of last week has helped them.

Ewhurst.—In this parish the growths show various qualities, but where good they are of more than average condition.

Heathfield.—Here there are a few good lots, but the complaint is general that the hops are small.

Wadhurst.—The gales and mold have seriously affected some of the grounds, but several good growths will be produced.

Battle.—A tolerably fair crop; but vermin and mold have been very troublesome, and quality is deteriorated by both.

Frant.—Some few grounds are bad; others are an average in quantity, with very fair quality. The Colgates have yet much lost ground to fetch up.

Etchingham.—Moderate crops are being secured from the grounds of three or four persevering growers.

Flimwell.—A few fair growths, others disappointing both in quantity and quality.

Northiam.—Though some grounds come down well, others are much below the estimates. Mr. Mannington has a nice crop.

Midhurst.—But for the gales the crop here would have been a good one generally; now some will be variable, while others could scarcely be better.

Brede.—Badly blighted pieces are nearly black; clean grounds are yielding well, with good quality.

Rotherfield.—Washing and sulphuring were attended by good results, but the gales seriously damaged large quantities of even the soundest hops; about an average crop.

Ninfield.—Some of the grounds here are yielding 8 and 10 cwts. an acre; quality fair.

Dallington.—Results rather disappointing, but here and there growths are large.

Sedlescombe.—A few grounds coming down well with average quality; others very much blighted, and picked, as a consequence, before they were matured.

Whatlington.—Mold is prevalent in some grounds, and the wet, boisterous weather has done much mischief. The earlies are fair; later sorts good, bad, and indifferent.

SURREY AND HANTS.

In our August report we remarked that Surrey might perhaps grow an average crop, though the appearances were rather against its doing so. It may be safely said now that Surrey can not grow an average crop. The blight has been severely felt in many grounds, especially those that were not washed, and the hops from these will be short in bulk and of exceedingly variable quality—some very good, almost as good, in fact, as in the washed gardens, others about as bad as any that will be put upon the market. In what is known as Farnham Town the average growth is a low one, and even the celebrated "Hart" plantation is not up to the average standard. Many grounds were severely attacked by aphis, and, except where washing was persevered in and done well, the bine has assumed a dark, unhealthy hue, showing that it is blighted. There are hops, it is true, but when examined they are found to be turning black at the strig. The sound and healthy gardens will average 10 to 12 cwts. per acre of excellent quality, but the average for the whole parish is not likely to be more than 6 cwts. Country Farnham will do better, however. There the general condition of the gardens is very fair, and in the parishes of Binstead, Bentley, Dockinfield, and Frensham both the quantity and quality will be good. The average of these parishes we should estimate at from 8 to 9 cwts. per acre. Mr. C. Lake, at Binstead, has a nice crop and was able to begin the ingathering at an early date. In the Oxted district of Surrey the crop is not up to the average. With regard to Hampshire, there are heavy growths around Alton, Petersfield, and Odiham, and the general quality will be good, though many samples will be affected as a result of the browning which a lot of the hops sustained by the gales. Winchfield, Froyle, Kingsley, and Crondall will not equal last year's production, but the quality, on the whole, will be excellent.

WORCESTERSHIRE AND HEREFORDSHIRE.

These districts have been severely smitten with vermin; but the majority of the growers have succeeded in overcoming the attack by systematic washing, and the result of their exertions is seen in large growths of sound, bright hops. Some, however, have not washed, and in such cases the blight is about as bad as we have ever seen it, many gardens presenting a sorry spectacle. Mold, also, has this year been very troublesome—certainly more so than usual, though it has been kept in check at most places by sulphuring. In the Worcester

district there will be a good proportion of sound, bright, well-grown hops at Leigh Linton (Malvern), Tenbury (notably from the Eardiston plantations), Ledbury, Bosbury, etc., and a few nice lots at Knighton-on-Teme and Clifton-on-Teme. Two-thirds of a crop seems to be about the general estimate right through. In the Hereford district such parishes as Weston Beggard, Pembridge, Woodmanton, Leominster, Kingsland, Bishop's Froome, and Endale seem to promise quite if not more than an average crop, and generally of excellent quality. At places, however, the blight was so heavy that washing failed to keep it under, and in these instances the hops will be very poor in quality, and perhaps not worth picking. Mold has also done serious mischief, and it has been running very fast during the past fortnight. In North Hereford the damage from both blight and mold has spoiled a large proportion of the crop. Picking in Worcester and Hereford did not become general until Monday last.

LATEST AND ADDITIONAL NOTES.

We are pleased to find that the hops are keeping well on the whole, and that, though the yield falls short of the estimates formed by the growers themselves, the general quality is turning out to be very fair. The following additional notes will be read with interest:

At Malling (Mid Kent) Mr. T. Phillips is likely to have a big yield; he has got quite a little army of pickers at work. The Messrs. Chambers, of Yalding, the Fairleighs, and other parishes in Mid Kent are favored growers. Mr. A. Thirkell, at Paddock Wood, has already harvested a large quantity of fine quality hops. In the Marden district of the Weald one or two grounds look like averaging not far short of a ton per acre. At Headcorn (Weald) some grounds are averaging 12 to 14 cwts., others only 4 cwts. At Goudhurst (also in the Weald) most of the growths are heavy. Around Maidstone the results fail to come up to estimates; the same thing applies to the parish of Hinxhill (Ashford district), though the quality on the whole is excellent. The Goldings in East and Mid Kent are improving very much. In two or three of the best grounds in the neighborhood of Canterbury the Bramlings are averaging 15 cwts. per acre of fine quality. Mr. Cooper's crops at Harbledown, as far as the picking has gone, have averaged about 10 cwts. Mr. Petley's Bramling growth from the Wingham district, and Mr. G. Whiteman's at Tyler Hill (Canterbury), will, we should think, be hard to beat anywhere. At Sevington, in the Ashford district, the estimated yield is not being realized, but the quality is superb. The latest indications with regard to the crop of the choice Kent Goldings and Weald of Kent and Sussex Colgates are more favorable; of both sorts there is now likely to be a good growth, the warmer weather that set in on Saturday being to their benefit.

There has been a decided improvement in the crop in the Worcester district since last week. The warm weather and hot sunshine have put a great deal of condition into the hops, and caused the late sorts to develop finely. There is now every probability, with a continuance of favorable weather, of the Worcester district growing a crop equal in quantity to that of last year and consisting of a large proportion of first-rate quality.

NEW HOPS.

The first pocket of this year's Worcester hops passed the public scales on Friday, the 12th ultimo. They were grown by Mr. H. T. Taylor, of Showle Court, Ledbury, and purchased by Messrs. Edward Webb & Sons, hop and seed merchants, Wordsley, Stourbridge, who sold them to Mr. Benjamin Elwell, of the Delph Brewery, Brierley Hill, at £10 per cwt.

Mr. C. Lake, of Binsted, for the fourth year in succession, sent to market the first pocket of Farnham hops of the year's growth. It was consigned to Messrs. Hook & Graham, hop factors, 87 High street, Borough, who sold it to Mr. C. H. Kiln, hop merchant, Woking, and it has been forwarded by him to Mr. Walter Kill, Bell Vale Brewery, Haslemere.

The first pocket of new Hereford hops was weighed over the public scales at Hereford on August 31 by the grower, Mr. Sam. Smith, of Woodmanton, and sold to Messrs. Charles Watkins & Son, the Hereford Brewery, at £10 10s. per cwt. The hops are of the description known as Early Goldings; the quality was very good.

Hop Acreage in England.

The following table shows the acreage under hops in England, as returned on June 4, in the years 1890, 1891, and 1892:

Counties.	1890.	1891.	1892.
	Acres.	*Acres.*	*Acres.*
Berks	11	11	10
Gloucester	*11	25	39
Hants	2,614	2,749	2,775
Hereford	*6,077	6,560	6,797
Kent	33,525	34,266	34,058
Notts	14	14	14
Salop	*98	112	117
Suffolk	*25	20	22
Surrey	1,874	1,955	1,938
Sussex	6,787	7,150	7,124
Worcester	*2,925	3,280	3,369
Total	*53,961	56,142	56,263

* These acreages do not agree with those given in the agricultural returns of 1890, owing to 3 acres in the county of Gloucester and 4 acres in the county of Suffolk having been originally returned in error, and to the returns for parts of the counties of Hereford, Salop, and Worcester having been originally made in hop acres instead of statute acres, causing a reduction of 442 acres in Hereford, 12 in Salop, and 133 in Worcester.

THE COMINO TREE OF COLOMBIA.

REPORT BY VICE-CONSUL SANTA MARIA, OF MEDELLIN.

By parcel post I forward a small box made of "comino crespo" containing seeds of this beautiful tree, which, I presume, does not exist in the United States.

This tree, called "comino," produces an excellent wood for the use of cabinetmakers and contains some exceptional properties, not only for high-class furniture, but for building purposes. The common kind of comino is very much appreciated for house-building, its merit being that it is a perfect proof against all wood-destroying insects so prevalent in this part of Colombia. It is a well-known fact that all kinds of timber used for building purposes in this country are assailed and destroyed within a short space of time by insects called "comejen," a winged insect; and a house built of common timber is fought shy of by all purchasers of property, whereas property built of comino timber will stand strong and unchanged for ages, and is unaffected by either insects, water, soil, or climate.

There is another kind of comino wood having the same properties as above described, but commanding a very high price and used mostly for veneering purposes. It is of a beautiful dark and light undulating color of a yellowish tortoise-shell appearance, as will be seen by the small box I send with the seed. High-class furniture veneered with this kind of comino, called here "comino crespo," presents a magnificent appearance, always bringing a high price if well worked and properly finished.

This tree is especially grown in the department of Antioquia, and also serves as a handsome ornament to a country place. You will likewise find inside the box of seed some leaves which I have picked from some plants in my country home.

The comino above described can be successfully cultivated at a temperature of between 18° and 20° C. I have no doubt but that if it can be cultivated and acclimated in the United States this beautiful and wonderful tree will be a great and an important acquisition to the American wood-workers.

One fully developed tree of comino can yield four hundred pieces, as follows: Two hundred boards 9 feet long, 10 inches wide, by 1 inch thick, and each of them can be sold for $1.20; two hundred girders 9 feet long, 4 inches wide, by 2 inches thick, and each is sold for $1. Besides, the branches of the tree are utilized for small columns for windows and for other purposes, and the very thin or exiguous ones for fuel, although it burns very badly, yielding a great deal of smoke.

The comino tree is not the *Sandalo citrino* of Ceylon, Brazil, and China, as is believed by some.

LUCIANO SANTA MARIA,
Vice-Consul.

UNITED STATES CONSULATE,
Medellin, August 16, 1892.

BUTTER-MAKING IN FINISTÈRE.

REPORT BY CONSUL DUPIN, OF NANTES.

During a recent visit to Morlaix I visited the several factories where butter is manufactured, and submit the following report as of possible interest to American butter-makers.

At Morlaix the butter industry is very important, the total yearly exportation amounting to 13,000,000 francs. Six houses are engaged in this industry and export butter to England, Norway and Sweden, the East and West Indies, and to South America. The butter for these markets is not manufactured at Morlaix. It is purchased in small or large quantities from farmers all over the country and is sent to Morlaix in large willow baskets containing about 200 pounds each. All qualities of butter are accepted. At the manufactories the butter is emptied into large kneading troughs, where it is graded, and then worked over by hand with very large wooden spoons made for that special purpose. It is next forced through the fluted rollers of a kneading mill worked by steam power. These two operations serve to extract whatever milk or water remains in the butter, a very important point for its preservation. Up to this point all the butter for exportation is worked in the same manner.

The best grade, which is shipped to England, Norway, Sweden, and to the large cities of France, is, after being washed (which is done only when

necessity requires, as it is not advantageous for the preservation of the butter), worked on a circular table with fluted rollers identical to those used in American creameries. Steam power is employed to move the rollers. On the same table the salting and coloring is done during the manipulation. This grade of butter receives from 5 to 6 per cent of salt, and the color given is of a light gilt. The butter is packed in earthen jars containing from 10 to 60 pounds of butter, according to size; white tissue paper is put over the butter and salt spread over the paper; the jar is covered with strong canvas and hoops of straw put around it to prevent breakage; it is then ready for shipment. This butter is excellent for kitchen and pastry use, and is said to keep well for from six to eight months.

The butter exported to South America, most especially to Brazil and to the East and West Indies, is of an inferior grade. After passing through the kneading mill it is worked, salted, and colored on the same table and with the same rollers as the pastry butter, with this difference: (1) It is not washed; (2) it is salted at the rate of from 12 to 13 per cent (one house salts at the rate of 18 per cent); (3) it is highly colored. The butter sent to Brazil is of a better quality than that shipped to Guadeloupe and the other West India Islands. It is of a deep orange color, while the poorer quality is colored a shade of red resembling very nearly the color of a ripe tomato, and is sold to the negroes, who prefer it on account of its red color. This butter is packed in kegs made of American black oak holding about 75 pounds. Strong white tissue paper is put over the butter, instead of cloth, and a layer of salt is spread over the paper, the bottom of the keg being similarly arranged before packing the butter. The keg is then headed and ready for shipment. The butter so prepared keeps well for from ten to twelve months.

In all cases the matter used in coloring is a vegetable substance named "roucou," imported in the form of paste from Cayenne and the West Indies, and each manufacturer prepares it as he chooses. This is generally done by mixing the paste with olive oil and adding saffron in sufficient quantity to obtain the right color. In all cases the salt used is pulverized sea salt, the use of which is said to be important for the preservation of the butter.

The house of Victor Cannes, at Morlaix, asserts that of late they have lost much of their trade with Guadeloupe through American firms, who, they say, furnish butter to that country at such a low figure that Morlaix can not compete with them. This firm, besides preparing butter for exportation, manufactures a very fine quality of table butter for home consumption. It is made in a regular creamery, the apparatus employed being the Danish system, known as the centrifugal power, for producing cream, and which received a gold medal at the Paris Exposition of 1889. Steam power is used in this creamery. The milk is purchased at the rate of 3 cents per quart, and after all the cream is extracted from it a certain quantity of this milk is returned to the farmer and the remainder sold at the rate of 1 cent per quart, thereby enabling the manufacturer to sell the creamery butter at a reasona-

ble figure. This butter is sold at Morlaix, but is sent particularly to Paris and other large cities in baskets containing from 5 to 20 pounds in pound and half-pound cakes. It is but lightly salted, straw color, and of delicious taste, but, owing to the process by which it is made, does not keep long, and can not therefore be exported.

H. DE SALLIER DUPIN,
Consul.

UNITED STATES CONSULATE.
Nantes, September 16, 1892.

THE WORLD'S SUGAR CROP OF 1892.

REPORT BY CONSUL-GENERAL MASON, OF FRANKFORT.

It was feared during the prolonged drought which prevailed in Germany during the past summer that the lack of moisture might seriously affect the yield of beet sugar in this country, as well as in France and Austria. It turned out, however—and particularly was this true in Germany—that, while the beets were smaller and the amount of juice which they contained proportionately less than during the previous year, it was relatively more condensed and sweet, so that the amount of saccharine matter remained about the same.

The beets are now gathered and the crop worked up to a point which affords a basis for accurate estimates of the total sugar crop of the year, which is reckoned from the beginning of September, 1892, until the end of August, 1893, as follows:

Country.	1890–'91.	1891–'92.	1892–'93.
	Tons.	*Tons.*	*Tons.*
Germany	1,331,965	1,198,156	1,200,000
Austria-Hungary	778,473	786,566	750,000
France	694,037	650,377	625,000
Russia	544,162	560,000	480,000
Belgium	205,623	180,377	200,000
Holland	61,307	37,451	65,000
Other countries	80,000	78,000	80,000
Total	3,695,567	3,490,927	3,400,000

The total European beet-sugar crop will be, therefore, according to this estimate, 90,000 tons less than that of last year and 295,000 tons less than the product of 1890–'91. Unless there should be a corresponding increase of cane sugar to meet this deficit, the outlook would seem to promise higher prices in the sugar market. A careful estimate recently made and published at Magdeburg, the center of the German sugar industry, puts the cane-sugar crop of the present year, including all countries except India and Australia, at 2,760,000 tons, against 2,795,000 tons for 1891–'92 and 2,529,536 tons for the season of 1890–'91. There is therefore by this calculation, in which Louisiana is put down for 225,000 tons, not only no increase, but a net de-

crease of 35,500 tons as compared with the same sugar product of the previous year, and there remains an aggregate supply of both beet and cane sugar as follows:

Description.	1890–'91.	1891–'92.	1892–'93.
	Tons.	*Tons.*	*Tons.*
Beet sugar (Europe)	3,695,568	3,490,927	3,400,000
Cane sugar	2,529,536	2,795,500	2,760,000
Total	6,225,104	6,285,427	6,160,000

This is a deficit of 125,427 tons in comparison with the crop of last year. There still remains one unknown quantity to meet the foregoing deficit, and that is the beet-sugar product of the United States for the current year, the statistics for which are not yet available at this distance. If the increase of our home beet-sugar product this year is equal to 125,000 tons, the world's total sugar supply for the current season will be substantially equivalent to that of the preceding year.

FRANK H. MASON,
Consul-General.

UNITED STATES CONSULATE-GENERAL,
Frankfort, November 20, 1892.

AFFAIRS IN TUXPAN.

REPORT BY CONSUL DRAYTON.

In this report of the third quarter ended September 30, 1892, I have to state that, notwithstanding the depression in business, the exports during this quarter amounted to $352,597.09, showing an increase of $170,214.79 as compared with the preceding quarter. There is more produce in transit to European markets than formerly, and also more imports from there, owing to the difference in exchange making both purchases and freights cheaper than from the United States.

Merchants say that they would rather purchase goods in the United States, but that, exchange being unsettled and at a premium of 1.5 per cent, while that in Europe is only 1.3 per cent, making a difference of 20 cents, and freight also being less according to exchange, they are forced to deal in European markets until the exchange question is decided and the silver value determined.

The past season has been very hot and dry, causing a great deal of sickness in the surrounding country, also a shortening in the crops of food stuffs. Corn and all vegetables are very high and will continue to be so for the next six months. The rains which have come were too late to be of any benefit to the present crop.

JOHN DRAYTON,
Consul.

UNITED STATES CONSULATE,
Tuxpan, October 28, 1892.

TRADE OF BARBADOS.

REPORT BY CONSUL DIMMICK.

For Barbados the year 1891 was eventful. A drought that prevailed during the early part of the year had a serious effect on the young crop of sugar cane and eventually caused it to fall far below the average in quantity, as may be seen in the statistics of this report.

The amount of exports for 1891 was the smallest that had been made for many years. Later in the year an insect known as the "shot-borer" appeared among the canes with the most disastrous results. Everything possible was done by the planters to prevent the spread of and to eradicate the pest, but with little satisfaction, and, though not as badly as formerly, the canes are still suffering.

It was only during the latter part of the year that the legislature of the colony seemed to awaken to the meaning of section 3 of the McKinley bill, and to realize that it might refer to them. They became alarmed and took steps to assure the United States of their commercial good will. Their movements led to action on the part of the other West India colonies. Eventually Barbados adopted a new tariff, which is, when compared with the old tariff, in at least a slight degree, made beneficial to the United States.

The greater portion of the imports came from the United States, while of the exports more than one-half went to the United States.

The amount of tonnage in navigation in 1891 was slightly less than in the preceding year, but, on the whole, trade seems to be slowly turning toward the United States. In the tonnage list no account is taken of ships which call here for orders only. If this tonnage were reckoned, the aggregate would be more than double what it now comes to, and the American tonnage list at this port would swell to fully ten times its present size.

American goods are winning their way here in the hardware line. Carriages are nearly all of American manufacture, and household furniture also is largely coming into use.

Our tradespeople in the United States are continually sending letters here seeking information which can not be given from this office without turning it into a general information bureau. Many of them seem to hold the opinion that our Government has put consuls at foreign posts, not as the servants of the Government, but as directly the servants and special property of each and every American manufacturer and trader. While it is impossible to reply to all, it is, of course, a pleasure to answer polite requests to furnish special information that can not be otherwise obtained. But many of these letters are in effect orders to study certain business markets and supply "directory" information. This class of letters can not be answered. It seems to me that it would be of great advantage to our advertisers in these West Indian colonies if they were to name plainly their prices and terms; all English

firms dealing here do so, and our people are at a disadvantage in leaving their would-be purchasers in doubt until, immediate demand being imperative, the trade naturally falls to the English market. The people will not send for information; it must come to them, and in time.

Table showing the difference in duties as imposed by the trade acts of Barbados of 1889 and 1891, respectively.

Articles.	Act of 1889.	Act of 1891.
Bread	6*d.* per 100 pounds	3*d.* per 100 pounds.
Cheese	7*s.* 6*d.* per 100 pounds	3*s.* 9*d.* per 100 pounds.
Corn meal	6*d.* per 196 pounds	1½*d.* per 196 pounds.
Flour	4*s.* 2*d.* per 196 pounds	3*s.* 1½*d.* per 196 pounds.
Lard and compounds	4*s.* 2*d.* per 100 pounds	2*s.* 1*d.* per 100 pounds.
Beef, salted and pickled	5*s.* per 100 pounds	3*s.* 9*d.* per 100 pounds.
Pork	do	Do.
Bacon	do	Do.
Mules:		
Valued at £12 10*s.* and over	£1 10*s.* each	15*s.* each.
Valued under £12 10*s.*	£1 each	10*s.* each.
Oil meal	2½*d.* per 100 pounds	1¼*d.* per 100 pounds.
Pitch pine	5*s.* per 1,000 superficial feet	3*s.* 9*d.* per 1,000 sup. ft.
Staves	6*s.* per 1,200 pieces	3*s.* per 1,200 pieces.
Animals for breeding	8 per cent ad valorem	Free.
Beef, including tongues (smoked and dried)	do	Do.
Bottles, glass	do	Do.
Bran	do	Do.
Bridges	do	Do.
Candles	do	Do.
Clocks	do	Do.
Crucibles	do	Do.
Fish on ice	do	Do.
Fishing apparatus	do	Do.
Hulls	do	Do.
India-rubber goods	do	Do.
Implements for agriculture	do	Do.
Lamps	do	Do.
Manure	do	Do.
Marble	do	Do.
Medicinal extracts	do	Do.
Paper of all kinds for printing, wrapping, etc	do	Do.
Photographic apparatus	do	Do.
Printers' ink	do	Do.
Printers' presses	do	Do.
Quicksilver	do	Do.
Sewing machines	do	Do.
Starch of Indian corn	do	Do.
Steam boilers	do	Do.
Sulphur	do	Do.
Trees for cultivation	do	Do.
Varnish	do	Do.
Watches	do	Do.
Water pipes	do	Do.
Wire for fences	do	Do.

Table showing the arrivals and departures of vessels at Barbados during 1890 and 1891.

ENTERED.

Year.	Steamers.		Sailing vessels.		Total.	
	No.	Tons.	No.	Tons.	No.	Tons.
1890	357	458,755	1,103	161,428	1,460	620,183
1891	314	442,371	1,024	146,082	1,338	588,453
Decrease	43	16,384	79	15,346	122	31,730

CLEARED.

1890	360	463,384	1,109	162,695	1,469	626,079
1891	314	442,371	1,025	147,481	1,339	589,852
Decrease	46	21,013	84	15,114	130	36,227

Table showing arrivals and departures of American vessels at Barbados during 1890 and 1891.

ENTERED.

Year.	Steamers.		Sailing vessels.		Total.	
	No.	Tons.	No.	Tons.	No.	Tons.
1890	7	10,826	92	29,130	99	39,956
1891	2	4,836	96	31,449	98	36,285
Decrease	5	5,990	.....	.....	1	3,671
Increase	.....	.....	4	2,319	.....	.....

CLEARED.

1890	7	10,826	92	29,130	99	39,956
1891	2	4,836	98	32,234	100	47,070
Decrease	5	5,990	.....	.....	.....	.....
Increase	.....	.....	6	3,104	1	7,114

Table showing the number and tonnage of steamers of each nationality entered and cleared at Barbados during 1891.

ENTERED.

Nationality.	With cargoes.		In ballast.		Total.	
	No.	Tons.	No.	Tons.	No.	Tons.
British	290	409,621	21	27,285	311	436,906
American	1	1,902	1	2,934	2	4,836
Norwegian	1	629	.....	.....	1	629
Total	292	412,152	22	30,219	314	442,371

CLEARED.

British	271	386,442	40	50,464	311	436,906
American	1	2,934	1	1,902	2	4,836
Norwegian	1	629	.....	.....	1	629
Total	273	390,005	41	52,366	314	442,371

Table showing the number and tonnage of sailing vessels of each nationality entered and cleared at Barbados during 1891.

ENTERED.

Nationality.	With cargoes.		In ballast.		Total.	
	No.	Tons.	No.	Tons.	No.	Tons.
British	768	67,712	68	19,176	831	86,888
American	83	25,226	13	6,223	96	31,449
Norwegian	27	11,699	8	5,182	35	16,881
Swedish	3	717	.....	.....	3	717
Dutch	33	1,671	1	60	34	1,731
French	8	2,560	1	470	9	3,030
Venezuelan	5	515	1	63	6	578
German	3	2,170	1	453	4	2,623
Danish	3	678	.....	.....	3	678
Italian	1	449	1	375	2	824
Austrian	.....	.....	1	683	1	683
Total	934	113,397	90	32,685	1,024	146,082

CLEARED.

British	736	67,902	91	18,899	827	86,801
American	61	20,110	37	12,124	98	32,234
Norwegian	13	7,537	23	9,695	36	17,232
Swedish	.....	.....	3	717	3	717
Dutch	35	1,767	.....	.....	35	1,767
French	4	2,144	5	886	9	3,030
Venezuelan	2	117	4	257	6	374
German	1	453	4	2,688	5	3,141
Danish	.....	.....	3	678	3	678
Italian	2	824	.....	.....	2	824
Austrian	1	683	.....	.....	1	683
Total	855	101,537	170	45,944	1,025	147,481

Table showing the general commerce of Barbados during 1890 and 1891.

Year.	Trade with the United States.		Total trade.	
	Imports.	Exports.	Imports.	Exports.
1890	$2,047,020.10	$3,580,347.42	$5,729,873.58	$5,781,071.20
1891	1,834,025.02	2,253,755.16	5,124,561.68	3,907,213.04
Decrease	212,995.08	1,326,592.26	605,311.90	1,873,858.16

Table showing the amount of each article exported to the United States during 1891.

Articles.	Amount.	Articles.	Amount.
Drugs	$16.20	Sugar	$1,677,563.81
Empty packages	97.49	Tamarinds	163.58
Hides	218.94	Total	2,253,755.16
Molasses	575,647.71		
Nutmegs	47.43		

Table showing the revenue and expenditure of the island of Barbados for 1890 and 1891.

Year.	Revenue.			Expenditure.
	Customs.	Incidental.	Total.	
1890	$558,780.62	$334,880.08	$893,660.70	$871,851.33
1891	478,943.60	307,804.52	786,748.12	848,644.72
Decrease	79,837.02	27,075.56	106,912.58	23,205.61

The census taken in 1891 gave a total of 190,000 inhabitants, or an increase of 10,000 since 1881. Of this total 16,000 were whites and the remainder colored.

The number of baptisms, marriages, and deaths in 1891 was as follows: Baptisms, 7,769; marriages, 986; deaths, 4,794.

The number of persons committed to prison during 1891 was as follows:

Description.	Male.	Female.
Adults	2,041	1,756
Juveniles	78	37
Total	2,119	1,793

The health of the island during 1891 was good.

E. A. DIMMICK,
Consul.

UNITED STATES CONSULATE,
Barbados, August 21, 1892.

THE NEW CURRENCY OF AUSTRIA-HUNGARY.

TRANSMITTED BY VICE-CONSUL-GENERAL MAASS, OF VIENNA.

[Translation.]

Law of August 2, 1892, fixing the "Krohnenwährung" (currency of the crown coin).

ARTICLE 1. In place of the present *oesterreichische Währung* (Austrian currency) there is to be the gold currency, the unit of which is the crown. The crown is divided into 100 hellers.

ART. 2. The standard weight for the coin is the kilogram, with its decimal divisions, as it has been promulgated by the law of July 23, 1871, as the general weight.

ART. 3. The gold coins of the country are minted in the alloy of 9 of gold and 1 of copper. One kilogram of minting gold will make 2,952 crowns; hence 1 kilogram of fine (pure) gold will make 3,280 crowns.

ART. 4. Of gold coins of the country there are coined (1) 20-crown pieces and (2) 10-crown pieces.

Out of 1 kilogram of minting gold will be coined 147.6 20-crown pieces and 295.2 10-crown pieces; hence 1 kilogram of fine gold will make 164 20-crown pieces and 328 10-crown pieces. A 20-crown piece will therefore weigh 6.775067 grams and contain 6.09756 grams of fine gold; a 10-crown piece will weigh 3.3875338 grams and contain 3.04878 grams of fine gold.

ART. 5. These gold coins will have the bust of Francis Joseph on the face and the imperial eagle, with the figure 10 or 20, respectively, and the year of their being coined on the reverse side. The inscription, in proper abbreviation, will be: "Franciscus Josephus I. D. G. Imperator Austriæ, Rex Bohemiæ, Galiciæ, Illyriæ, etc., et Apostolicus Rex Hungariæ."

The edge will be smooth, and that of the 20-crown pieces will contain in sunken letters the words "Viribus unitis." The edge of the 10-crown pieces will have sunken ornaments.

The inner border consists on both sides of a flat bar, the inner circuit of which touches a circle of beads (bead close to bead). The 20-crown gold coins will be 21 millimeters in diameter, and the 10-crown pieces will be 19 millimeters in diameter.

ART. 6. The process of coinage shall be such as to insure the perfect exactness of the coins in regard to standard and weight. In so far as there can not be obtained a perfect exactness of the single coin, the utmost deviation, more or less, which is permitted must not exceed 0.002 of the raw weight and 0.001 of the standard weight.

ART. 7. The weight of the 20-crown piece is fixed at 6.74 grams, and that of the 10-crown piece at 3.37 grams.

Gold coins which by common circulation have not been lessened below that weight will be a legal tender at all the offices of the fiscus and the State and in private intercourse. However, gold coins which, in consequence of long circulation and wearing off, have lost so much in weight as not to reach the standard weight will be withdrawn from circulation by the State for the purpose of remelting. For this purpose such worn-off gold coins are to be taken at their full nominal value by all the pay offices of the State and by other public pay offices and are, by way of the imperial royal central pay office of the State at Vienna, to be delivered to the imperial royal chief mint office at Vienna. Coins which have been lessened in their weight otherwise than by common circulation will be taken by the pay offices of the State and other public offices, after deducting the loss of their intrinsic value, for the purpose of being recoined in the above manner.

ART. 8. The stamping of the gold coins of the country is done on account of the State. Twenty-crown pieces will also be coined on account of private persons, that is, when the imperial royal mint office is not employed by the State. The stamping dues for stamping on private account will be fixed by ordinance, but the maximum for 20-crown pieces must not exceed 0.3 per cent of the value.

ART. 9. Besides the above-named gold coins of the country, Austrian ducats will, as hitherto, be stamped as commercial coins, *i. e.*, $81\frac{818}{835}$ pieces out of one "Wiener" mark (0.280668 kilogram) of fine gold with a standard of 23 carats (0.986⅓). The gold coins of 8 and 4 florins, introduced by the law of March 9, 1870, will not be coined any more.

ART. 10. The silver coins of the country at 2, 1, and one-fourth of 1 florin (*oesterreichischer Währung*), as stamped according to the imperial patent of September 19, 1857, will for the present remain in circulation. Silver coins of the *oesterreichische Währung* (Austrian currency) of the country are no more to be stamped, except of those quantities of silver which are already in the possession of the financial administration or have been acquired by the latter for coining purposes. As long as the said silver coins of the country are not withdrawn from circulation they are to be taken by the pay offices of the State and other public pay offices and by private persons in payment for all payments that are legally to be made in the crown currency in such a manner that they will be calculated as follows: The 2-florin piece=4 kronen (crowns); 1-florin piece=2 kronen; quarter-florin piece=50 hellers.

ART. 11. Besides the gold coins of the country, there will next be coined the following coins of the crown currency: (1) Silver coins, 1-crown pieces; (2) nickel coins, (*a*) 20-heller pieces and (*b*) 10-heller pieces; (3) bronze coins, (*a*) 2-heller pieces and (*b*) 1-heller pieces.

ART. 12. The 1-crown pieces will be stamped from an alloy of 0.835 of silver and 0.165 of copper. Out of 1 kilogram of standard silver there will be coined two hundred 1-crown pieces; hence the 1-crown pieces will have the weight of 5 grams. At the coining the 1-crown pieces must be given the standard weight and the standard alloy. In so far as absolute exactness can not be obtained with single pieces, a deviation, more or less, is permitted, which

must not exceed three one-thousandths of the standard alloy and ten one-thousandths of the standard weight.

ART. 13. The 1-crown pieces will have on the face the bust of Francis Joseph and on the reverse side the imperial crown and the year of the coining. The legend, in proper abbreviation, is to be: "Franciscus Josephus I. D. G. Imperator Austriæ, Rex Bohemiæ, Galiciæ, Illyriæ, etc., et Apostolicus Rex Hungariæ." The edge of the 1-crown piece will be smooth and contain in sunken letters the motto "Viribus unitis." The diameter of the 1-crown piece will be 23 millimeters.

ART. 14. The coining of the 1-crown pieces will be performed only on account of the State. There are to be coined 1-crown pieces to the value of 140,000,000 crowns. By way of ordinance the terms will be fixed at which the stamping and issuing of the 1-crown pieces will take place.

ART. 15. The nickel coins will be stamped out of pure nickel. Out of 1 kilogram of pure nickel will be stamped two hundred and fifty 20-heller pieces or three hundred and thirty-three 10-heller pieces. The face of the nickel coin will have the imperial eagle; the reverse side will show the value of the coin and the year of the coinage. The edge will be ribbed. The diameter of the 20-heller pieces will be 21 millimeters and that of the 10-heller pieces will be 19 millimeters.

ART. 16. The stamping of nickel coins will take place only on account of the State. Nickel coins are to be coined up to the value of 42,000,000 crowns.

On their being issued the silver coins of 20, 10, and 5 kreutzers will be withdrawn from circulation.

By way of ordinance the terms of coinage and issue of these coins will be fixed and also those of the withdrawal from circulation of the small silver coins of *oesterreichische Währung* (Austrian currency).

ART. 17. The bronze coins will be stamped out of an alloy of ninety-five parts of copper, four parts of tin, and one part of zinc. There are to be coined out of 1 kilogram of that alloy (1) three hundred pieces at 2 hellers and (2) six hundred pieces at 1 heller. The face of the bronze coins bears the imperial eagle; the reverse side contains the value of the coin and the year of its coinage. The edge will be smooth. The diameter of these coins is fixed at 19 and 17 millimeters, respectively.

ART. 18. The coining of the bronze coins takes place only on account of the State, and must altogether not exceed the value of 18,200,000 crowns. They must be issued only on the withdrawal of the copper coins at 4 kreutzers, 1 kreutzer, and half a kreutzer of *oesterreichische Währung*.

By way of ordinance the terms of the coinage and issue of these coins will be fixed, and also those of the withdrawal from circulation the copper coins of *oesterreichische Währung*.

ART. 19. The 1-crown pieces, and also the nickel and bronze coins, will be taken in payment according to their nominal value by all the pay offices of the State and by the other public pay offices, that is to say, the 1-crown pieces to an unlimited amount, the nickel and bronze coins up to the amount of 10 crowns. Besides, they are to be taken by way of exchange (articles 4 and 10) and by all the pay offices acting as pay offices of exchange on terms fixed by way of ordinance. In regard to private transactions, it is decreed that nobody is obliged to take in payment 1-crown pieces to a larger amount than 50 crowns, nickel coins to a larger amount than 10 crowns, and bronze coins to a larger amount than 1 crown.

ART. 20. Article 19 does not include coins that are perforated or have become lessened in weight otherwise than by common circulation, nor does it apply to counterfeit coins. If counterfeit coins are presented to the pay offices of the State or other public pay offices, they are at once to be withdrawn from circulation, without any indemnification whatever, and are to be delivered to the imperial royal chief mint office at Vienna. Coins which are perforated or have become lessened in weight otherwise than by common circulation, and which are presented to the pay offices of the State or other public pay offices, are to be marked so as to be excluded from legal circulation. Silver, nickel, and bronze coins which, by reason of cir-

culation and wear, have lost considerable in weight or discernibility will be taken in payment or for exchange by all public pay offices, but are to be withdrawn from circulation, on account of the State, for the purpose of recoinage.

ART. 21. The silver and copper coins of *oesterreichische Währung* stamped in accordance with the imperial patent of September 19, 1857; imperial ordinance of October 21, 1860; law of July 1, 1868; law of March 30, 1872; law of April 16, 1878; law of February 26, 1881; law of March 10, 1885; and the law of June 10, 1891, are to remain in circulation until their calling in will be decreed. This decree will take place in the way of ordinance and in connection with the carrying out of this law. There will also be decreed by way of ordinance the last term for the redeeming of the coins called in from circulation by the pay offices of the State. With the lapse of that term all obligations of the State to redeem these coins will cease. Until then there are to be calculated and to be taken in payment, according to article 10 of the law of July 1, 1868, the 20-kreutzer pieces at 40 hellers, the 10-kreutzer pieces at 20 hellers, the 5-kreutzer pieces at 10 hellers, the copper coins of 4 kreutzers at 8 hellers, the 1-kreutzer pieces at 2 hellers, and half-kreutzer pieces at 1 heller.

ART. 22. The so-called "Levantiner thaler," with the picture of Empress Maria Theresa and the date of the year 1870, will still be coined, in the same manner as formerly, as a commercial coin, *i. e.*, 12 thalers out of 1 Vienna mark (0.280668 kilogram) fine silver of 13 ounces, 6-grain (0.8333) standard.

ART. 23. The paper money in *oesterreichische Währung* is to be taken by all the pay offices of the State and the other public pay offices, and also by private persons, in payment for all payments which are legally to be made in the crown currency until that paper money be called in from circulation; in such payments each florin, *oesterreichischer Währung*, of the nominal value of the paper money is to be calculated equal to 2 crowns.

ART. 24. The general introducing of the obligatory calculating in the crown currency, together with the settling of the relations of the general circulation of coins and the regulations for the new currency (article 1) in regard to legal relations, as also the regulations respecting the silver coins of the country at 2 florins, 1 florin, and one-fourth of 1 florin, *oesterreichischer Währung*, are to remain in circulation according to the present law; furthermore, the ordinances about the redemption of the State bank notes, the regulations on the settlement of the paper-money circulation, and the ordinances on the reassumption of cash payment will be fixed by special laws. However, all payments to be made in *oesterreichische Währung*, be it in hard cash or not, may, from the time when the present law comes into force, be made, according to the choice of the debtor, in gold coins of the crown currency of the country in such a manner that the 20-crown piece will be calculated at the value of 10 florins, *oesterreichischer Währung*, and the 10-crown piece at the value of 5 florins, *oesterreichischer Währung*. The same may be applied to the 1-crown pieces and the nickel and bronze coins of the crown currency in so far as their being a legal tender is fixed by article 19 of this law; they are to be calculated in such a manner that the 1-crown piece be valued at 50 kreutzers, the 20-heller piece at 10 kreutzers, the 10-heller piece at 5 kreutzers, the 2-heller piece at 1 kreutzer, and the 1-heller piece at half a kreutzer, *oesterreichischer Währung*.

ART. 25. This law will come into force at the same time with the law by which the ministry of the kingdoms and countries represented in the Reichsrath will be empowered to conclude a coin and currency convention with the ministry of the countries of the Hungarian Crown.

Law of August 2, 1892, by which the ministry of the kingdoms and countries represented in the Reichsrath is empowered to conclude a coin and currency convention with the ministry of the countries of the Hungarian Crown.

The ministry of the kingdoms and countries represented in the Reichsrath is empowered by the law of December 21, 1867, concerning the affairs common to all the countries of the Austrian Monarchy and the manner of their being treated, to conclude with the ministry of the countries of the Hungarian Crown the following coin and currency convention:

ARTICLE 1. In both domains of the Monarchy there will be, in place of the present *oesterreichische Währung* (Austrian currency), the gold currency, the unit of which is the crown. The crown is divided into 100 hellers.

ART. 2. The standard weight for the coin is the kilogram, with its decimal divisions.

ART. 3. One kilogram of standard mint gold, composed of nine-tenths of gold and one-tenth of copper, will make 2,952 crowns, hence 1 kilogram of fine gold will make 3,280 crowns.

ART. 4. Of gold coins of the country there will be stamped (1) 20-crown pieces and (2) 10-crown pieces. Out of 1 kilogram of standard mint gold there will be coined 147.6 20-crown pieces or 295.2 10-crown pieces; hence 1 kilogram of fine gold will make 164 20-crown pieces or 328 10-crown pieces. Therefore, the 20-crown piece will have a raw weight of 6.775067 grams and a fine weight of 6.09756 grams, and the 10-crown piece will have a raw weight of 3.3875338 grams and a fine weight of 3.04878 grams. The diameter is to be: Of the 20-crown pieces, 21 millimeters; of the 10-crown pieces, 19 millimeters.

The inscription of these coins will have to contain the legible statement of the value—20 or 10 crowns—and the year of the coinage. In other ways these gold coins, and also the other coins of the crown currency, will have to be as concordant as possible. On this the imperial royal and the royal Hungarian ministers will come to an agreement.

The process of the coinage of these gold coins shall insure the perfect exactness of the coins respecting their standard and weight. In so far as an absolute exactness can not be obtained with single pieces, the utmost deviation, more or less, which is permitted must not exceed one one-thousandth of the standard fineness or two one-thousandths of the raw weight.

ART. 5. The gold coins of the crown currency of the country will be stamped by both governments at their mints and on their own account. The stamping is unlimited as to the amount. Besides, both the governments will allow 20-crown pieces to be also coined on the account of private persons, in so far as the respective mints are not employed with coining on the account of the State. For the coining on the account of private persons no higher due for coining must be deducted than 0.3 per cent of the value of the 20-crown pieces. The fixing of the due for coining within the maximum due will be made public by way of ordinance after an agreement of both the ministers of finance, and the other terms for coining on private account will likewise be settled by way of ordinance on uniform principles to be agreed upon.

ART. 6. The gold coins issued in both the domains according to the preceding regulations, which have not lost by common circulation so as not to reach the standard weight mentioned below, are to be taken as of full weight in all payments to the pay offices of the State and other public pay offices of both the domains. The *Passirgewicht* (minimum weight for passing) of the 20-crown pieces is 6.74 grams; that of the 10-crown pieces is 3.37 grams. Gold coins which by reason of long circulation and wearing off have lost so much in weight as no longer to reach the *Passirgewicht*, although they are to be taken by the pay offices of the State and other public pay offices of both the domains at their nominal value and as if of full weight, are not to be put in circulation again, but are to be delivered to the central pay office of the respective State that takes them from circulation. The coins stamped by the respective State will then be delivered by the respective central pay office of the State to the mint for recoining. The coins taken from circulation and which have been coined by the other State will, however, be delivered for recoinage to the financial department of the other State against the restitution of the same number of pieces fit for circulation. On the carrying out of this regulation an agreement will be concluded between both the ministers of finance. Coins which have been lessened in weight otherwise than by circulation will, when presented to the pay offices of the State or other public offices of both the domains, be taken from circulation on payment of the value of the standard and without regard to their nominal value, and will, in the same manner as above, be delivered for recoinage.

ART. 7. Neither of the governments will have other than the above-named gold coins of the crown currency of the country stamped at their mints. The gold coins at 8 and 4 florins introduced by the law of March 9, 1870, or article 12 of the law of 1869 will not be coined any more in either of both the domains. Each party to the convention is at liberty to have ducats still coined according to article 20 of the law of September 19, 1857, or article 7 of the law of 1868.

ART. 8. Besides the gold coins of the country, there will next be stamped the following coins of the crown currency: (1) Silver coins, 1-crown pieces; (2) nickel coins, (*a*) 20-heller pieces and (*b*) 10-heller pieces; (3) bronze coins, (*a*) 20-heller pieces and (*b*) 1-heller pieces. The 1-crown pieces will be stamped out of an alloy of 0.835 of silver and 0.165 of copper. One kilogram of standard silver will make two hundred 1-crown pieces; hence the 1-crown piece will weigh 5 grams. In stamping them the standard weight and standard fineness must be observed. In so far as an absolute exactness can not be obtained with single pieces, a deviation, more or less, is allowed, which must not exceed three one-thousandths of the standard fineness and ten one-thousandths of the weight. The diameter of the 1-crown piece will be 23 millimeters. The nickel coins will be stamped out of pure nickel. Out of 1 kilogram of pure nickel will be stamped 250 20-heller pieces or 333 10-heller pieces. The diameter of the 20-heller pieces will be 21 millimeters, that of the 10-heller pieces 19 millimeters. The bronze coins will be stamped out of an alloy of 95 parts of copper, 4 parts of tin, and 1 part of zinc. Out of 1 kilogram of that alloy are to be made 300 2-heller pieces or 600 1-heller pieces. The diameter of the 2-heller piece will be 19 millimeters, that of the 1-heller piece will be 17 millimeters.

ART. 9. The stamping of the 1-crown pieces, the nickel coins, and the bronze coins will take place in both the domains solely on and for account of the respective domain. Of the 1-crown pieces there will in both the domains next be stamped 200,000,000 crowns in all. The time when the stamping and issuing will take place will be agreed on by both the ministers of finance and will be fixed by way of ordinance. Nickel coins will in both the domains next be stamped to the amount of 60,000,000 crowns in all. The coinage and issue of them, after both ministers have come to an agreement, will take place at terms to be fixed by way of ordinance; and on their being issued the silver coins at 20, 10, and 5 kreutzers, *oesterreichischer Währung*, will be taken from circulation.

Bronze coins will in both the domains next be stamped to the amount of 26,000,000 crowns in all. The coinage and issue, after both the ministers of finance have come to an agreement, will take place at terms to be fixed by way of ordinance; and on their being issued the copper coins at 4 kreutzers, 1 kreutzer, and half a kreutzer are to be taken from circulation.

ART. 10. The amount for 1-crown pieces, nickel coins, and bronze coins, as regulated by article 9, are to be divided between the kingdoms and countries represented in the Reichsrath and the countries of the Hungarian Crown at the ratio of 70 to 30. At the same ratio the expenses for redeeming the coins of the *oesterreichische Währung* of any kind or stamp will be divided between both the domains.

ART. 11. The governments engage to take in payment at all pay offices of the State and the other public pay offices the 1-crown pieces, nickel coins, and bronze coins stamped in either domain at their nominal value, that is to say, the 1-crown pieces to an unlimited amount, the nickel and bronze coins up to the amount of 10 crowns. Besides, the coins of both the coinages will be taken to an unlimited amount at the pay offices acting as exchange pay offices of both domains on terms to be agreed upon and to be published by way of ordinance. In regard to private transactions, it is fixed that no person is obliged to take in payment more than 50 crowns in 1-crown pieces, more than 10 crowns in nickel coins, and more than 1 crown in bronze coins of the crown currency issued by both the domains. These regulations are not to be applied to coins that are perforated or are lessened in weight otherwise than by common circulation and to counterfeit coins. If counterfeit coins of any kind are presented

to the pay offices of the State or to other public pay offices, they are at once, without any compensation whatever, to be taken from circulation and to be sent to the mint office of that domain in which the seizure has been made. If the counterfeit coin concerns the coinage of the other domain, the respective mint office is to inform the mint office of the other domain. Coins of either of the two stamps which are perforated or have been lessened in weight otherwise than by common circulation, when presented to the pay offices of the State or other public pay offices of either domain, are to be marked so as to exclude them from legal circulation. The regulation of article 6 concerning the gold coins of the country is not affected hereby.

One-crown pieces, nickel coins, and bronze coins which have considerably lost in weight or discernibility will still be taken in payment or for exchange at the pay office of the State and other public pay offices of both the domains; but they are not to be put in circulation again, but are to be delivered to the central pay office of the State of that domain in which they have been received. Coins that have been stamped by the domain itself will then be delivered by the respective central pay office of the State to the mint office for the purpose of recoinage. Coins thus taken from circulation that have been stamped by the other domain will be taken, on the restitution of the nominal value, by the financial department of the other domain for the purpose of recoinage. On the carrying out of this regulation a convention will be concluded between both the ministers of finance.

ART. 12. The silver coins of the country of 2 florins, 1 florin, and one-fourth of 1 florin, stamped by virtue of the imperial patent of September 19, 1857, and the 1-florin pieces of *oesterreichische Währung* stamped by virtue of article 7 of the law of 1868 or article 12 of the law of 1869 will for the present have to remain in lawful circulation in both the domains. The governments of both the domains engage themselves not to coin any longer any silver coins of the country in *oesterreichische Währung*, except out of such quantities of silver that are in possession of the financial departments of both the domains or that have already been acquired by them for the purpose of coinage. The determining of these silver quantities will be settled by officials to be delegated by both the ministries of finance. In general, an agreement will always have to be come to between both the ministries of finance on the procuring of silver for the purpose of coinage. So long as the designated silver coins of the country have not been withdrawn from circulation they are to be taken by all pay offices of the State and other public pay offices of both domains and by private persons in both these domains in all payments which legally are to be made in the crown currency, in such a manner that there be calculated the 2-florin piece equal to 4 crowns, the 1-florin piece equal to 2 crowns, and the one-fourth of 1 florin equal to 50 hellers.

ART. 13. The small silver and copper coins of *oesterreichische Währung* stamped by virtue of the imperial patent of September 19, 1857; the imperial ordinance of October 21, 1860; the law of July 1, 1868; the law of March 30, 1872; the law of April 16, 1878; the law of February 26, 1881; the law of March 10, 1885; and the law of June 10, 1891; and stamped by virtue of the Hungarian articles of laws of 1868, 1869, 1870, 1878, 1879, 1881, 1885, and 1891—are to remain in circulation in both the domains until their redemption will be ordained. This ordinance will ensue by way of enactment in connection with the carrying out of this law after an agreement to be come to by both governments. Until then these coins are to be taken in payment at the value fixed by law for these small coins, that is to say, the 20-kreutzer pieces at 40 hellers, the 10-kreutzer pieces at 20 hellers, the 5-kreutzer pieces at 10 hellers, the copper coins of 4 kreutzers at 8 hellers, the 1-kreutzer pieces at 2 hellers, and the half-kreutzer pieces at 1 heller.

ART. 14. To the government of the kingdoms and countries represented in the Reichsrath is reserved the right still to coin the so-called "Levantiner thalers" in the sense of article 19 of the imperial patent of September 19, 1857; they, however, in the sense of section 11 of the imperial patent of April 27, 1858, are not a legal tender.

ART. 15. The coinage of both domains is mutually examined by the general assaying offices of either domain. To carry out this regulation an agreement will be concluded between both the ministers of finance. There will be sold at the price of the prime cost, which

will be fixed by way of ordinance after an agreement between the two ministers of finance, weights of the standard weight and others of the *Passirgewicht* of the gold coins of the country, which weights are adjusted and stamped under public control.

ART. 16. At the end of every month, either of the two governments is to inform the other government, by way of a statement, of the new coins stamped during the course of the month and of the withdrawal and melting of old coins, with a statement of the kind of coins, their standard, and weight. In like manner both the ministers of finance will inform each other of all the laws and ordinances that will be made for regulating the coinage in the sense of the present convention.

ART. 17. The paper currency, *oesterreichischer Währung*, until being withdrawn from circulation, will have to be taken by all the pay offices of the State and other public pay offices and private persons in payment for all payments that are to be made in the legal crown currency, that is to say, in such a manner that each florin of *oesterreichische Währung* of the nominal value of the respective paper currency will be calculated equal to 2 crowns.

ART. 18. The general introduction of the obligatory calculating in the crown currency in connection with the regulation of the general traffic of specie, also the ordinances respecting the silver coins of *oesterreichische Währung* at 2 florins, 1 florin, and one-fourth of 1 florin remaining in circulation according to the present convention, will ensue by way of the legislatures of the two domains on principles to be agreed on. The two governments will also come to an agreement in regard to the regulations of how to apply the crown currency to legal procedures before the respective bills have been brought before the houses. However, beginning from the time when the present convention shall be valid in both the domains, all the payments legally to be made in *oesterreichische Währung*, be it in specie or not in specie, by the pay offices of the State and the other public pay offices and in private intercourse, may in both domains be made, according to the choice of the debtor, in gold coins of the crown currency of the country of either coinage in such a manner that the 20-crown piece be calculated at the value of 10 florins and the 10-crown piece at 5 florins in *oesterreichische Währung*. The same applies to the 1-crown pieces and to the nickel and bronze coins of the crown currency, according to article 11 of this convention, in such a manner that the 1-crown piece will be calculated at the value of 50 kreutzers, the 20-heller piece at 10 kreutzers, the 10-heller piece at 5 kreutzers, the 5-heller piece at 1 kreutzer, and the 1-heller piece at one-half of 1 kreutzer in *oesterrichische Währung*.

ART. 19. At the proper time the governments of both the domains will, on mutual agreement, place bills for the redemption of the *Staatsnoten* (paper money of the State) before both the legislatures. The expenses for redeeming these *Staatsnoten*, which form a common pending debt, will be borne in common only up to the amount of 312,000,000 florins in *oesterreichische Währung*, in such a manner that kingdoms and countries of the Reichsrath will contribute 70 per cent and the countries of the Hungarian Crown will contribute 30 per cent. In regard to the process of redeeming the *Staatsnoten*, there has already been agreed upon that it shall be effected by both the governments by first redeeming the *Staatsnoten* at 1 florin and replace them by other lawful currency, with the exclusion, however, of *Staatsnoten*. The *Staatsnoten* withdrawn from circulation are to be destroyed, and the amount of 312,000,000 florins is to be deducted from the amount of the *Staatsnoten* in circulation. In the regulation of the paper-money circulation, and also about the reassumption of cash payment, agreement will be come to by the governments of both the dominions at the proper time.

ART. 20. This convention will be in force until the end of the year 1910, inclusive. If one year before the termination of the present convention notice should be given by either of the contracting parties, the coins which have been stamped according to this convention will be still admitted for circulation in both the domains for at least two years. Both the governments engage to uphold within that time the crown currency of the conventional standard and coinage system. At the end of that time each conventional party is held to redeem the 1-crown pieces, nickel and bronze coins of the crown currency of its own coinage that are within the other domain against the legal coins of the country. The claim for such

redemption ceases after the lapse of another year. If there be no notice given by either of the conventional parties one year before the termination of the convention, the convention will remain in force for the next ten years. In that case the above stipulations for the termination of the prolonged conventional period will come into force.

ART. 21. Immediately after the coming into force of this convention both the governments will continue their negotiations in order to come to an agreement on the legal enactments on the general introduction of the obligatory calculating in the crown currency, in connection with the general intercourse of coins, and furthermore on the settlement of the paper currency, and also in respect to the taking up of the payment in cash.

ART. 22. This convention will come into legal force on the day of its being published, which day is to be agreed on by both the governments.

Law of August 2, 1892, concerning the discharging in gold coins of the crown currency of the country of engagements payable in gold florins.

ARTICLE 1. Engagements made to be paid in actual Austrian or Hungarian gold florins may also be made in gold coins of the crown currency of the country of either coinage, according to the choice of the debtor, and according to the rate of the value as fixed by article 2 of the present law, and according to the law by which the ministry of the kingdoms and countries represented in the Reichsrath has been empowered to conclude a coinage and currency convention with the ministry of the countries of the Hungarian Crown, and according to the law fixing the crown currency.

ART. 2. In such payments each 42 Austrian or Hungarian gold florins are to be calculated equal to 100 gold coins of the crown currency of the country.

ART. 3. These regulations are, too, especially to be applied to payments for customs duties.

ART. 4. This law comes into force at once with the law empowering the ministry of the kingdoms and countries represented in the Reichsrath to conclude a coinage and currency convention with the ministry of the countries of the Hungarian Crown.

ART. 5. With the performance of this law the ministers of finance, of justice, and of commerce are commissioned.

Law of August 2, 1892, concerning an amendment to article 87 of the statutes of the Austro-Hungarian Bank.

(1) To article 87 of the statutes of the Austro-Hungarian Bank, fixed by the law of June 27, 1875, and renewed by the law of May 21, 1887, for prolonging the privilege from January 1, 1888, until December 31, 1897, the following addition is to be made:

The bank is bound to take at any time, at their chief institutions at Vienna and Buda-Pesth, lawful gold coins at their nominal value and gold ingots according to the lawful standard of the crown currency in exchange for bank notes, if such be demanded. The bank is entitled to have the gold ingots examined and fined by technicists designated by the bank, at the expense of the seller, and also to deduct the dues for coining, as regulated and published by the Government.

(2) The minister of finance is commissioned with the execution of this law, which comes into force at the same time with the law by which the ministry of the kingdoms and countries represented in the Reichsrath is empowered to conclude a coinage and currency convention with the ministry of the countries of the Hungarian Crown.

Law of August 2, 1892, by which the minister of finance is empowered to take up a loan on account of the State in effective gold for the coinage of the gold coins of the crown currency of the country, and by which regulations are made in regard to the newly coined gold coins of the country, and the controlling of the coinage.

ARTICLE 1. The minister of finance is empowered to take up a loan by disposing of the *Rente-Obligationen* (bonds bearing interest) bearing 4 per cent interest in gold, issued according to the law of March 18, 1876, to that total amount which is requisite to redeem in effective gold an amount of 183,456,000 Austrian gold florins.

ART. 2. The amount of gold received is at once to be coined into gold coins of the crown curreney of the country.

ART. 3. These gold coins are to be placed in the imperial royal State central pay office or, on order and for account of the financial administration, in the Austro-Hungarian Bank, there to be kept separately.

ART. 4. The gold coins thus preserved according to the preceding article can be disposed of only by way of legislation.

ART. 5. The Staatsschulden-Control-Commission (board to control the public debt) is appointed to watch that the regulations of articles 3 and 4 of this law be observed. For this purpose the control commission has the counter control of the gold coins thus deposited. The commission has, as often as it thinks proper, but at least once a year, to make a special report to the Reichsrath on the exercise of its control.

ART. 6. The minister of finance is directed in time to bring in a bill on the regulation of the floating debt, limited to the maximum amount of 100,000 florins in *oesterreichische Währung* in *Partial-Hypothekar-Anweisungen* (partial mortgage assignments); or the *Staatsnoten* (bank notes of the State) in circulation representing them.

ART. 7. The minister of finance is commissioned with the execution of this law, which will come into force on the day of its being published.

Law of August 2, 1892, concerning the conversion of the obligations of the untaxed 5 per cent income notes, of the 5 per cent State railway bonds of the Vorarlberg Railway, and of the 4¼ per cent State railway bonds of the Crown Prince Rudolph Railway.

ARTICLE 1. For the purpose of repaying (1) the obligations of the bonded debt bearing 5 per cent, free of taxes, of the kingdoms and countries represented in the Reichsrath, issued by virtue of the law of April 11, 1881; (2) the railroad State bonds dated December 12, 1886, issued by virtue of the law of April 8, 1884, not yet drawn, and mortgaged in the book of the railroad above the lines of the Vorarlberg Railroad, bearing an annual interest of 5 per cent in *oesterreichische Währung* in silver and redeemable at the latest in the year 1962; (3) the railroad State bonds dated July 12, 1888, issued by virtue of the law of April 8, 1884, and not yet drawn, mortgaged in the book of the railroad of the lines of the Crown Prince Rudolph Railway, bearing an annual interest of 4¼ per cent in *oesterreichische Währung* in silver and redeemable at the latest in the year of 1960—the Government is empowered to take up a loan at an interest of at most 4 per cent, free of taxes, which, in regard to the obligations enumerated in 1, is to be in the form of a public debt bearing interest of the kingdoms and countries represented in the Reichsrath; and in regard to the bonds enumerated in 2 and 3 by means of the issue of State railroad obligations with the present mortgage and the same terms for repayment. The loan is to be taken up so that there will accrue a lasting saving to the fiscus as compared to the present annuity. Hence the categories of bonds mentioned are to be recalled, either all of them at once or by lots, for repayment or conversion in such a manner that, with the expiration of the last term to be fixed by the minister of finance, the bonds thus called in will cease to bear any interest.

ART. 2. The minister of finance is commissioned with the execution of this law, which will come into force on the day of its publication.

Publication of the imperial royal president of the ministry of August 11, 1892, by which is proclaimed the convention of coinage and currency concluded between the ministries of the kingdoms and countries represented in the Reichsrath and the countries of the Hungarian Crown.

In execution of the law of August 2, 1892, the ministry of kingdoms and countries represented in the Reichsrath has concluded with the ministry of the Hungarian Crown the coinage and currency convention as stipulated by law. According to article 22 of the said law, both the governments have appointed the 11th day of August, 1892, as the day of the publication and of coming into lawful force of this convention.

Ordinance of the ministry of finance of August 11, 1892, for the executing of article 8 of the law of August 2, 1892, by which the crown currency is regulated, and for the carrying out of the law of August 2, 1892, concerning an addition to article 87 of the statutes of the Austro-Hungarian Bank.

(1) By reason of article 5 of the law of August 2, 1892, by which the ministry of the kingdoms and countries represented in the Reichsrath is empowered to conclude a coinage and currency convention with the ministry of the countries of the Hungarian Crown, and in agreement with the royal Hungarian ministry of finance, and in the carrying out of article 8 of the law of August 2, 1892, the stamping dues for the stamping of 20-crown pieces on account of private persons is for the present fixed as follows:

The imperial royal chief mint office at Vienna is to collect a stamping due of 6 crowns for 1 kilogram of fine gold in all cases of stamping 20-crown pieces on account of private persons, with the exception of stamping for account of the Austro-Hungarian Bank. For the stamping on account of the Austro-Hungarian Bank the stamping due to be collected by the imperial royal chief mint office is fixed at 4 crowns for each kilogram of fine gold.

(2) Hence the Austro-Hungarian Bank, in the sense of the law of August 2, 1892, is bound to redeem gold bars at any time against bank notes at the rate of 3,276 crowns for 1 kilogram of fine gold.

(3) The time when the imperial royal chief mint office at Vienna will begin the coining of 20-crown pieces on account of private persons and the other conditions on which the stamping is to be effected will be separately published.

(4) This ordinance will be in force on the day of its being published.

Ordinance of the ministry of finance of August 8, 1892, concerning the calling in of the inland silver coins stamped according to the "Conventions-Münzfuss" (convention standard of coinage).

The imperial royal ministry of finance, with reference to sections 11 and 12 of the imperial patent of April 27, 1858, calls in (fixing December 31, 1892, as the last term) the inland convention silver coins enumerated in the said imperial patent at the following values in silver coins of *oesterreichische Währung:* (1) The 2-florin piece, or scudo, at 2.10 florins; (2) the 1-florin piece, or one-half scudo, at 1.05 florins; (3) the one-third-florin piece, or zwanziger (20 kreutzers) of later stamping, nine-tenths fine, and the lira austriaca, at 35 kreutzers; (4) the one-third-florin piece, or zwanziger, of older stamping, 9⅓ ounces fine, at 34 kreutzers; (5) the one-sixth-florin piece, or 10-kreutzer piece, and the half lira, at 17 kreutzers; (6) the one-twelfth-florin piece, or 5-kreutzer piece, and the one-quarter lira, at 8.5 kreutzers; (7) the one-twentieth-florin piece, or 3-kreutzer piece, at 5 kreutzers; (8) the kronenthaler (crown dollar), at 2.30 florins; (9) the one-half kronenthaler, at 1.12 florins; (10) the one-quarter kronenthaler, at 55 kreutzers.

Hence these coins are to be taken at the above values in all payments or in exchange at the imperial royal pay offices and at other public pay offices, but they must not be paid out again. After the lapse of that term they will no longer be accepted by the imperial royal pay offices and other public pay offices, either at their nominal values or at their intrinsic values, nor will any redemption of any kind take place after that time at the imperial royal offices of gold and silver redemption.

The latter will also apply to the convention coin of 6 kreutzers called in by imperial ordinance of August 29, 1870, but which are still accepted at their silver value; beginning from the end of December, 1892, they will likewise be excluded from redemption.

It is again brought to mind that the so-called "Levantiner thaler," which is the convention thaler of the year 1780 with the picture of the Empress Maria Theresa, which have ceased to be of legal value in accordance with section 11 of the above imperial patent, must, as hitherto, not be taken in payment at the imperial royal pay offices and other public pay offices, and must likewise remain excluded from redemption.

No. 147——10.

TAHITI.

REPORT BY CONSUL DOTY.

GEOGRAPHICAL FEATURES.

Tahiti, the principal island of the French possessions in Oceania, is situated in 17° 29′ south latitude and 149° 36′ west longitude and consists of two peninsulas, namely, Tahiti and Tairaboo, the entire length being 32 miles and circumference 120 miles.

HISTORY.

The inhabitants of these islands belong to the Malay race, are affable, ingenious, and hospitable, but volatile and sensual. Their kings and chiefs were believed to be descendants from the gods, and in former days were very much respected. Some old families have retained this love and respect that was formerly given to their forefathers, but many of the old customs have naturally been abandoned since the French protectorate of 1842, which was gained by France over this island after a very hard and prolonged struggle. In the year 1880 Pomare V, lately deceased, signed over to France his rights to government and the succession of any of his family to the throne of Tahiti after his death for a pension of $12,000 per annum. The French Government also granted pensions to all of the royal family. Tahiti was formally annexed to France on June 29, 1880, since which time it has been a colony of the second class of the Republic of France.

GOVERNMENT.

The Government is vested in a governor and privy council of eight members and a general council of eighteen members elected by general suffrage every three years. The latter body has the power to enact all laws for the colony, subject to the approval of the President of the French Republic, who, however, seldom vetoes any measure.

DISTRICTS.

Tahiti is divided into the municipality of Papéiti and eighteen districts, over which a chief is elected by each district with a select council of eight members, which has certain limited power in judging land claims, making and repairing roads, and other local matters.

THE CITY OF PAPÉITI.

Papéiti, the capital of the French possessions in Oceania, is situated on the west side of the island of Tahiti. It contains a population of 4,000, of which number 3,500 are natives. It has a very good harbor, with two passages through the coral reef, and vessels of any tonnage may enter without danger.

MUNICIPAL GOVERNMENT.

On the 20th of May, 1890, Papéiti was granted a city government, which consists of the following officers: Mayor, two assistant mayors, secretary of the municipal council, and fifteen members of said council. This council is elected for two years by general suffrage. The municipal government has very little power, owing, no doubt, to Papéiti being the seat of the colonial government, which still has a certain control over city affairs. On the whole, the municipal government is to be preferred to the old mode of governing this place, and the results of the efforts of many members have much improved the condition of things in general.

AGRICULTURE.

I notice in the annual report of the British consul at this place for the year 1890 the following, which, I believe, will enable those interested to judge the importance of this subject:

Those whom I have consulted as to the agricultural prospects of this country hold such varied opinions that it is not without some hesitation that I have drawn up this portion of my report. Some only maintain that plantation enterprise can be made a success, others hold the opposite view, and at the present moment the cultivation of crops for export or to supply the place of produce now imported is almost entirely neglected.

The thoroughly mountainous aspect of Tahiti might suggest that a very limited space only could possibly be available for cultivation; but it will be found that, although the lofty volcanic range which traverses the center of the island does in some places terminate abruptly on the coast, still for the most part it slopes down to a belt of fairly fertile land, skirting the shores of the greater part of the island. On the higher slopes and ridges of this range the soil is poor and arid, producing merely stunted bushes and a spare undergrowth. The intermediate slopes are in many places covered with the wild plantain, or "fei," while the lower ravines and valleys contribute liberally a natural production of vegetables and fruits, upon which the natives greatly depend for subsistence. The alluvial land from the foot of the mountains to the seashore is in most places narrow, being seldom over a mile in width. It extends, however, for probably not less than 100 miles, and, together with the broad valleys and portions of the rising ground, offers tracts of land well suited for the cultivation of sugar, coffee, and cotton. From past experience it is proved that the island of Tahiti is capable of yielding excellent crops of these commodities. It may therefore be wondered at that both sugar and coffee are now largely imported, and that cotton offers but a meager supply to meet the demand made for it in the market.

The reason for the absence of enterprise which permits this state of things may be assigned to the want of capital and the disadvantages attending labor. There is but little capital in the country, and labor is expensive and very difficult to obtain.

The natives, now mostly of mixed breeds, are indolent, very immoral, and lack entirely ambition or desire to elevate themselves above their present position. Their requirements are few and easily satisfied. The land naturally yields plentiful supplies of breadfruit, plantains, bananas, cocoanuts, and oranges, which serve their daily wants, and fish are plentiful; hence their reluctance, to some extent, to toil for what to them must appear to be of but very little profit. It may also be added that the communistic habits of the natives would not allow them to lay aside earnings, and thus we find that the average native does not care to work except to supply his immediate wants and pleasures.

Attempts have been made from year to year by the local chamber of agriculture to induce natives to engage in cultural and farming pursuits by offering prizes to be awarded at the annual fête on July 14 to owners of the finest plantations and holders of the best live stock.

In some cases it has stimulated the people to work for the time, but as yet it has had no permanent beneficial result.

Imported labor from various islands has been tried, but the result has not been satisfactory, the chief difficulty being caused by the immigration regulations not giving the planter sufficient hold over his men, while he has been bound by his contract to send the laborer home at the expiration of his agreement. The prospect under the existing circumstances is not encouraging, and, even were labor easily obtained, the same would hold partly true as far as foreign enterprise is concerned, for, owing to the greater part of the arable land being held in numerous small lots by different native proprietors, who are indisposed as a rule to sell, it would be found difficult to secure sufficient land in one place to form a holding sufficiently large to carry on agricultural enterprise on any extensive scale.

An exception may be quoted in the large plantation of Atimaono, some 25 miles from Papéiti, formerly held by an English company, which, from the reckless speculations of the manager, failed. It is at present lying practically waste; but this estate, if secured by enterprising capitalists, could undoubtedly, under proper management, be very profitably worked.

In addition to the remarks of Mr. Consul Hawes I will add the following:

For some years past agriculture seems to have experienced but little activity, owing, no doubt, to necessary capital not being forthcoming and the labor question. I am, however, happy to report that the immigration laws have in the past year been amended so as to permit planters to import coolie labor from Tonquin, French China, or elsewhere, with but very few necessary laws and restrictions; and, viewing the matter from a practical standpoint, the regulations should be satisfactory to all concerned.

In July, 1891, an American company was organized in New York under the name of the Tahiti Commercial and Improvement Company, with a capital of $500,000, the object of this company being to work the extensive plantation of Atimaono and to encourage the native and white inhabitants of the island to plant cane, which the company engages to grind at a small expense to the planter. Much interest has been expressed here as to whether this company will start or not, and the promotion has the best wishes and the encouragement of the Government and every right-minded man in this community, and, if they really do make a start, will, without doubt, with proper management, make a great success of this enterprise.

The only plantation productions cultivated for export now are cotton and cocoanuts, and also vanilla. The former staple has commanded but poor prices in the market, owing to the general depression of the commodity throughout the world during the past year, and many planters are inclined to discontinue growing it. Owing to the blight on the cocoanut trees, which started in 1889 and which has caused the destruction of many trees, and the overstock in the San Francisco market, there has been very little money in this cultivation for the past three years; but, however, the outlook for next year is more favorable. Thirteen tons of vanilla were exported from this colony during the year 1891, but the prices commanded were very low. All of this quantity was exported to the United States, except 1 ton.

Notwithstanding the very mountainous appearance of the island, there are nearly 200,000 acres of land suitable for the cultivation of sugar cane,

coffee, cotton, vanilla, cocoanuts, and other tropical plants and fruits. In fact, it is stated in many works on sugar cane that Tahiti is the most desirable variety, and has been known for many years to the planters on the island of Cuba and other islands of the West Indies.

Tahiti is essentially an agricultural country, watered by numerous rivers and streams, covered by a dense growth of timber, the decayed foliage of which has for centuries enriched the volcanic soil, fitting it for the cultivation of any tropical plant.

I believe that Tahiti holds out a splendid opportunity for capital for the development of its natural resources, and the day is not far distant when 60,000 tons of sugar will be annually exported from this colony to the United States.

EXPORTS.

Copra.—There were 6,127 tons exported last year, valued at $368,760, an increase of over 2,606 tons as compared with 1890. This extraordinary increase can not be accounted for, except that natives of the Tuamotu group are yearly becoming more industrious and are more appreciative of the value of money than formerly.

Mother-of-pearl shell.—Of this valuable commodity 598 tons were exported to all countries during the year 1891, valued at $242,275, the average price of the article during the year being 54 cents in Chilean coin per kilogram (2.205 pounds).

Pearl shells are found in the Tuamotu and Gambiers groups. The latter islands have produced very little shell during the past five years, the quality of which is inferior to the Tuamotu, which is equal to the finest found in the world. The Tuamotu shell brings a better price in the American and European markets than any other kind. In former days the natives dived for the shell simply to secure the pearls, but to-day the shell is the first care and the pearl second. Many pearls of value are found here, but no return has ever been rendered, and thus the value is a mere guess, but it may be put down at $15,000. For the past few years diving machines have been brought into use in order that more shell could be had without any harm being done to the fisheries, for as soon as a lagoon appears to be used up the government causes the same to be closed; so, therefore, it is thought that these machines do little, if any, harm and are a source of revenue to the colonial government. There are at present nineteen machines in use, the value of which, with boat and equipment, is about $1,500 each, or making the total capital invested at $28,500. Each machine pays a tax of $200 per annum and $8 per ton for the shell found.

The value of shell exported to the United States last year was $125,487.94, being a little over one-half of the total amount exported to all countries. Although a portion was forwarded to European countries, yet I believe that most of it remained in America. Several factories for making pearl buttons and fancy articles made of pearl shell being started in the United States, I am inclined to believe that within a few years most of the

shell exported from these islands will find sale in the American markets. It would be a saving to American manufacturers to import their own shell direct from here, which would be a simple matter by appointing an agent in Tahiti.

Cotton.—There has been very little demand in the market for this commodity, and prices have been very poor for the planter. The shipments during 1891 exceeded those of the preceding year by 125,613 pounds, the total quantity shipped being 572,246 pounds, valued at $102,490. The natives, encouraged by the rise in price in the beginning of 1890, planted a great deal, which accounts for the shipments being so much more during 1891.

Vanilla.—This article ranks fourth on the list, the total value exported being $35,789. The planter has suffered much, owing to the low prices paid this year. The depression is owing to the large stock of this article on hand in San Francisco.

The exports for all countries during the year 1891 amounted to $807,831, an increase of $203,469 over 1890. These are the largest exports ever realized for Tahiti, and it is an interesting fact that $321,936 went to the United States, as will be seen by the following table:

Table showing value of exports from Tahiti during the years 1888–'91.

Country.	1888.	1889.	1890.	1891.
United States	$107,276	$192,461	$251,962	$321,93
France	102,456	94,690	42,186	65,24
Great Britain	91,330	190,280	154,891	74,57
Germany	31,513	54,278	.....	51,36
Portugal	.....	9,886	155,323	283,77
Other countries	1,400	.....	.....	10,90
Total	333,975	541,595	604,362	807,83

Table showing principal articles of export from Tahiti during the year 1891.

Articles.	Quantity.	Value.
Bèche de mer, pounds	13,330	$1,11
Coffee, do	15,660	2,81
Cotton:		
In bales, do	272,246	102,40
Seed, tons	645	7,20
Desiccated cocoanut, pounds	85,606	7,70
Fungus, do	39,833	2,77
Vanilla, do	24,585	35,78
Wool, do	8,091	84
Copra, tons	6,127	368,70
Shell, do	598	242,27
Cocoanuts, number	861,872	16,7
Oranges, do	3,568,000	12,6
Trees (orange, etc.), do	320,020	3,6
Wax, pounds	4,894	7
Hides, number	5,727	1,34
Other	.....	69
Total	.....	807,83

The following table contains the values of exports, as shown by the consular invoices of this consulate for the year 1891:

Articles.	Value.	Articles.	Value.
Mother-of-pearl shell	$125,487.94	Oranges	$4.563.29
Copra	76,573.87	Coffee	2,842.65
Cotton	49,132.11	Fungus	602.93
Vanilla	36,698.70	Miscellaneous	2,731.90
Cocoanuts	16,681.62	Total	325,913.27
Orange plants	5,000.00		
Desiccated cocoanuts	5,598.26		

The difference between the above amount and the official table furnished by the Government is to be accounted for by the fact that many articles of American origin are reshipped to the United States, and accordingly not included in the official export table.

IMPORTS.

Table showing the value of all articles imported into Tahiti from all countries during the years 1888–'91.

Country.	1888.	1889.	1890.	1891.
United States	$365,945.60	$319,394.40	$384,504.00	.....
France	100,800.00	53,433.60	90,326.40	.....
Great Britain	95,534.40	92,501.60	118,814.40	.....
Germany	.....	12,744.80	24,542.40	.....
Other countries	8,933.60	1,350.00	25,704.00	.....
Total	571,213.60	479,424.40	643,891.20	$626,841.00

It will be seen from the above table that the United States supply more than one-half of the import trade of this colony, the principal articles imported being flour, biscuits, sugar, wine (California), timber, soap, ships' stores, kerosene, calico, prints, etc.

Table showing the principal articles of import during the year 1891.

Articles.	Quantity.	Value.
Live stock	.....	$15,168
Salted provisions	.....	49,512
Flour	2,605,354 pounds	60,096
Rice	483,452 do	11,765
Biscuits:		
Ordinary	416,374 do	13,013
Sweet	12,575 do	2,280
Potatoes	263,448 do	2,573
Beans	53,383 do	1,373
Sugar:		
Refined	294,910 do	14,813
Brown	113,042 do	3,705
Tea	6,642 do	1,603
Coffee	9,154 do	1,469
Olive oil	1,767 gallons	2,880

Table showing the principal articles of import during the year 1891—Continued.

Articles.	Quantity.	Value.
Vegetables.....pounds...	781	$2,372
Onions.....do.....	69,628	1,195
Wheat.....do.....	145,522	1,157
Barley.....do.....	505,927	5,703
Oats.....do.....	2,929	48
Bran.....do.....	63,967	692
Opium.....do.....	1,715	6,447
Wine:		
Red—		
In casks.....gallons...	39,196	13,488
In bottles.....do.....	614	975
White—		
In casks.....do.....	4,835	2,203
In bottles.....do.....	101	154
Champagne.....do.....	548	1,416
Absinthe.....do.....	15,187	5,919
Vermouth.....do.....	1,435	1,335
Gin.....do.....	609	317
Rum.....do.....	6,023	1,642
Beer.....do.....	6,586	3,730
Whisky.....do.....	33	91
Bitters.....do.....	361	586
Amer picon.....do.....	460	485
Liqueurs, assorted.....do.....	1,502	2,640
Cognac.....do.....	4,004	3,940
Other liquors.....	.....	1,512
Vinegar.....gallons...	1,448	504
Mineral waters.....cases...	125	595
Linseed oil.....gallons...	5,285	3,168
Turpentine.....do.....	491	278
Oils.....	.....	720
Coal.....tons...	1,620	4,747
Bricks.....number...	34,000	278
Cement.....pounds...	168,951	1,003
Iron.....do.....	330,182	12,696
Timber.....	.....	25,248
Hay.....pounds...	27,689	269
Drugs.....	.....	1,550
Paints.....pounds...	90,277	5,544
Soap.....do.....	246,935	8,170
Perfumery.....	.....	4,320
Tobacco and cigars.....	.....	7,896
Matches.....gross...	8,200	2,918
Calico.....yards...	250,813	11,314
Parens.....do.....	249,301	16,853
Denims.....do.....	34,186	4,186
Silks.....	.....	1,210
Muslins.....yards...	82,074	6,082
Prints.....do.....	671,950	37,377
Other cloths.....	.....	79,805
Ships' stores.....	.....	14,318
Kerosene.....gallons...	45,729	8,784
Other articles.....	.....	128,707
Total.....	.....	626,841

SHIPPING.

Table showing shipping entered at the port of Papiti during the year 1891.

Nationality.	Sailing vessels.		Steamers.		Total.	
	No.	Tons.	No.	Tons.	No.	Tons.
United States	14	4,485	.....	.....	14	4,885
French	2	521	.....	.....	2	521
Coasters*	286	12,476	.....	.....	286	12,476
British	3	759	9	4,275	12	5,034
German	1	340	.....	.....	1	340
Danish	6	2,588	.....	.....	6	2,588
Other countries	1	64	.....	.....	1	64
Total	313	21,633	9	4,275	322	25,908

*These are all small schooners, mostly of American build, trading among the neighboring islands.

During the year 1891 two new schooners were added to the trading fleet. There also arrived this year one new man-of-war schooner for the French Government, built in San Francisco.

J. LAMB DOTY,
Consul.

UNITED STATES CONSULATE,
Tahiti, June 30, 1892.

STEAMSHIP-BUILDING IN SPAIN.

REPORT BY CONSUL TURNER, OF CADIZ.

I have the honor to inclose herewith a description of the new steamer *Joaquin Piélago* and a series of photographs illustrative of the same, received from the director of the Transatlantic Company, of Cadiz.*

This is the vessel which the Transatlantic Company placed at the disposal of the secretary of the navy during the Huelva celebrations. In it he entertained the officers of the foreign navies present at the naval review.

A published description of this vessel will be of interest to shipbuilders as indicating what can and is being done in Spain, and will be read with pleasure by the constantly increasing number of tourists who are coming to Europe by the North German Lloyd's steamers, landing at Gibraltar and making side trips to Tangier, Cadiz, Seville, Huelva, and Madrid. Heretofore this service has been made in small, uncomfortable, not to say dangerous, boats, and a change to this delightful steamer will be highly appreciated by all who have traveled in the flat boat that plies between Gibraltar and Tangier.

R. W. TURNER,
Consul.

UNITED STATES CONSULATE,
Cadiz, September 1, 1892.

*Photographs sent to the Navy Department.

DESCRIPTION OF THE "JOAQUIN PIÉLAGO."

[Inclosure in Consul Turner's report.]

The trial on the part of the Spanish Government for admission as a mail steamer of the above vessel, belonging to the Compañia Transatlantica, Barcelona, intended for the mail and passenger service between Cadiz, Tangier, Algeciras, and Gibraltar, took place at the first-named port on the 27th of July last. The *Joaquin Piélago* is the first merchant steamer built in Spain, and her principal dimensions are: Length over all, 202 feet 6 inches; length between perpendiculars, 185 feet; width, 28 feet; depth to awning deck, 21 feet 6 inches; depth molded, 14 feet; draft, 14 feet; displacement, 1,204 tons; gross register tonnage, 841 tons; net register tonnage, 300 tons; horse power (natural draft), 1,250; speed (ordinary sea service), 13 knots.

The vessel is built of milled steel, possesses a double bottom for part of her length, and is divided into six water-tight compartments. Her engines are triple expansion, with vertical inverted cylinders 18 inches, 30 inches, and 48 inches, and 36-inch stroke, the working pressure being 160 pounds per square inch, making 106 revolutions per minute. She is a single-screw steamer, and her propeller is of delta metal. All the materials employed in her construction, with few exceptions, are of Spanish manufacture. The plates and bars for the hull are from the works of Messrs. Duro & Co., of the province of Asturias, who are the makers of the materials employed in the construction of the armor-plated cruisers *Maria Teresa*, *Vizcaya*, and the *Almirante Oquendo*, which were built by Messrs. Rivas, Palmer & Co., of Bilboa. The engines and boilers were supplied by the civil arsenal of Barcelona. The steamer has been built under the supervision of the bureau veritas and holds a certificate for the highest class in the register of passenger steamers.

The special features of the steamer are her saloons and cabins. They are a marvel of comfort and beauty. Tourists traveling between Cadiz and Tangier will be delighted by the artistic taste displayed by her finishings.

As the cabins are in many respects novel in design and construction, the following description of them will not be found devoid of interest: They are of three classes—preferential, first, and second. The preferential is situated in the center of the vessel, forward of the engine room, and is entered by way of the smoking room, which is itself very handsomely fitted and furnished after the Moorish style. Fine carving, fancy tiles, costly woods, and mirrors enter largely into its composition.

Passing down her stairs, the balustrades of which are of sycamore, the stairs themselves having a thin covering of marble, adding greatly to the beauty of the surroundings, the saloon is reached. This is a handsome apartment the whole width of the ship, and it is no idle boast to say that very few steamers afloat can pride themselves on the possession of one so charming. This is also on the Moorish style and forms the "*patio*" to the smoking room above, from which the saloon is visible. The floor of the latter is a mosaic of natural-colored hard woods. There are two luxurious divans at the sides provided with rich cushions, and in the four corners of the room, on pedestals, are exquisite vases in harmony with surrounding decorations. The room is provided with two tables capable of enlargement. In its reduced state each table will accommodate four, and when enlarged eight persons. These tables are rather ingenious, being made on the telescopic principle, in order to leave the saloons unencumbered by excessive furniture when not required in their enlarged state. Another ingenious arrangement is that by which the porthole windows, when opened, can be hidden from view. A small part of the wall above is neatly hinged, so that on opening the window is allowed to pass and closing it is held in hidden position. The window spaces are also provided with fretwork shutters through which both light and air are filtered. Although there is a profusion of much rich carving, the eye can easily be deceived by the introduction here and there of a quantity of fancifully molded papier-maché, which, after undergoing a certain process, dries as hard as stone, and, when gilded and touched with colors, produces a most artistic effect. The walls of this saloon are composed of marble; fancy tiles and mirrors and

many rich hangings, carpets, and tasteful gilding also abound. Passing into the staterooms, the principal feature is the ingenious way in which two adjoining rooms may be rapidly converted into one. Many other admirable contrivances are noticeable for the speedy conversion of seats and chairs and even wardrobes into beds, etc. The walls of the lavatories also call for special note. They consist of a light framework of iron, on which is stretched galvanized-iron gauze, covered with a layer of Portland cement painted stone color. This sort of bulkhead is exceedingly advantageous where a continuous water-tight surface is required, and where cleanliness is desired and water must run frequently, and is preferable to wood for obvious reasons. The first-class dining saloon is a comfortable apartment, and a noticeable feature is the automatic arrangement for tipping the seat at each side of the table close up when not in use, thus leaving plenty of room for moving about. The staterooms belonging to this class are also exceedingly well designed. By an ingenious arrangement of the furniture and bulkheads each two of those reserved for ladies and three of those for gentlemen can be rapidly turned into one large room, and *vice versa*. The partitions are hinged to the ceiling and can be swung up and made fast like a door, and all the fittings are detachable and capable of being fixed elsewhere. In the space between the beams the sofas can be safely deposited.

The walls of the second-class water-closets are faced with Portland cement and tiles.

Brass cups are fitted on the bridge deck for installing a dining table to accommodate ten persons. This is a charming innovation, which will be greatly appreciated by passengers, who will thus be able on those calm, oppressive days so common to the south of Europe to lunch or dine "al fresco." The forecastle, which is in the 'tween decks, is on a par for excellence with the rest of the ship. The sailors' berths are of iron and canvas, with leeboards of varnished pitch pine, and are arranged to fold up against the ship's sides. These have a wooden lining, which is also detachable. The vessel is provided with the most modern appliances and deck machinery. Her life-saving equipment is also of the highest order, and is far in excess of the Spanish Government and the English Board-of-Trade regulations. She is also provided with improved mechanical ventilation. In order to comply with the Spanish Government requirements relating to mail steamers, the vessel has been supplied with the following pieces of artillery: Two guns of the Hontoria class of 9 centimeters and two quick-firing guns (Maxim Nordenfeldt) of 11 millimeters. She also possesses a well-stocked armory. The *Joaquin Pielago* is also fitted throughout with the electric light, and she is provided with a search light for entering and leaving port at night.

The sum of £50,000 named by some as the cost of this steamer far exceeds the correct figure. When, however, it is considered that she has been fitted out in all respects like a private yacht, and that no expense has been spared in her equipment, it will be understood that no ordinary comparison of "so much per ton" is possible. English and American builders are best able to appreciate the enormous difficulty surrounding a first venture of this nature, the principal among which must always be the lack of experience in a new industry on the part of workmen. Be it said, however, to their honor, that the Spanish artisans have proved themselves to be an industrious and intelligent set of men. Spaniards are becoming more and more alive to the necessity of putting their shoulders to the wheel and occupying that position in the commercial world which they feel ought to belong to them. The Compañia Transatlantica has found that shipbuilding in Spain is not only possible, but, under certain circumstances, profitable, and they state that they can certainly turn out cabin work and all classes of decorations at less cost and better finished than they have heretofore secured abroad.

On a six hours' trial the *Joaquin Pielago* maintained an average rate of speed of 14½ knots, the maximum attained being 15 knots. This result was considered eminently satisfactory, being far in excess of what was expected.

The Compañia Transatlantica are now making preparations for the construction of a large transatlantic steamer in their dockyard here.

AMERICAN TRADE IN EASTERN ASIA.

REPORT BY CONSUL SEYMOUR, OF CANTON.

I have the honor to communicate some items in regard to the commerce of this consular district, as gleaned from the official returns of the six custom-houses located along the coast of this province of Quang-Tong for the year 1891.

There is no classification of the nationality of imports and exports in those returns; but, as only European merchants are engaged in selling cotton goods (and many other commodities) brought from foreign countries, there is certain to be, as there now is, small chance for American cotton goods to be brought vigorously into competition with cotton goods from Europe in the markets of a large portion of eastern Asia, unless American manufacturers of cotton goods adopt some plan of combination to maintain an active and aggressive system of keeping their manufactures within the reach of native merchants in these eastern markets; and to this end I urgently recommend the plan of employing experienced and trusty American salesmen, assisted by indispensable native compradors, who would be safe advisers as to credits, as the most effective way to successfully compete with European merchants and manufacturers in the East. Canton sent to the United States last year over $5,000,000 worth of merchandise.

Without grouping the prominent features of commerce in India and Japan with those of intermediate countries, it is merely necessary to mention the significant fact that last year this province of Quang-Tong imported raw cotton to the value of about $1,100,000 in gold, and cotton yarn to the value of about $9,000,000 in gold, or over $10,000,000 worth of cotton and cotton yarn (mostly from India), which was used, with considerable native cotton, in Chinese manufactures, instead of extending importations of foreign goods to meet the consumption.

With moderate amounts of American ham and bacon, tinned milk and fruits, clocks, and other articles of necessity or utility among the imports of this consular district, which might be increased tenfold by a thorough canvass of the markets by earnest American salesmen, we must confine our items of American imports exceeding $100,000 to ginseng, which this province received from the United States to the value of $170,000; flour (from California and Oregon) to the value of about $600,000 in gold; and kerosene to the extent of 1,106,565 cases, which was about one-fourth of all the American kerosene received by China in 1891.

Russian kerosene is steadily increasing in India, China, and other Asiatic countries. In 1891 China imported over 1,050,000 cases of Russian kerosene, or equal to about one-fourth of the total imports of American kerosene into China.

Oil pipes are being laid between the Caspian Sea and Persian Gulf, and iron-tank ships are being built to bring Russian oil in bulk to eastern Asia;

and enormous oil tanks are being constructed in Hongkong for the reception and storage of Russian kerosene. The indications are that keen competition will exist for the control of this important trade.

The meaning of all this is, that, in order to secure the benefits of Asiatic markets for American productions and manufactures, there must be vigilance and exertion. It can not be achieved by dumping piles of circulars before people who can not read them; but it can be accomplished by means of personal, "face-to-face" work between business men.

CHARLES SEYMOUR,
Consul.

UNITED STATES CONSULATE,
Canton, August 18, 1892.

THE SULTANATE OF JOHORE.

REPORT BY CONSUL WILDMAN, OF SINGAPORE.

As all the industries, agricultural products, and costumes of the Sultanate of Johore will be comprised within the splendid exhibit destined for the World's Fair, and as the Sultan Abu Bakar will be in Chicago with his suite during the exhibition, I have thought that a description of himself and country might be of interest to those who may meet or see him.

The Sultanate of Johore, one of the richest independent kingdoms in eastern Asia, is 14 miles from Singapore across the island, on the mainland of the Malay Peninsula. The Sultan is an enlightened and humane ruler, and stands high in the estimation of European nations, as is shown by his numerous decorations. He is a knight of the English orders Grand Cross of St. Michael and St. George and of the Star of India; knight of the Royal Prussian Order of the Crown (first class), of the Grand Cross of the Order of Kalakaua, and of the Chinese Order of the Dragon; commander of the Order of Saxe-Coburg and Gotha; has a presentation gold medal from the Prince of Wales; and is the sovereign of his own national orders. He is a good English student, and has traveled extensively over Europe.

The history of Johore extends back to the Portuguese days, when it took part—only second to that of Acheen—in the one hundred and forty years' struggle over Malacca between the Portuguese and the Dutch. Its history from that time until 1819, at which date Sir Stamford Raffles founded Singapore, is a record of petty wars and family quarrels. In 1819 the Sultan of Johore deeded to the British the island of Singapore, comprising 206 square miles, reserving for his family certain lands which to-day are almost invaluable. In 1877 Johore added to its possessions the Sultanate of Muar, so that at present the little Kingdom embraces about 15,000 square miles, stretching from latitude 2° 40′ S. to Cape Romania, and including the small islands that lie along the coast to the south of 2° 40′. It is surrounded on three sides by the sea; on the fourth side its boundaries are

Malacca, Jehol, and the River Endau. The population of about 200,000 (22 to the square mile) is confined to the districts lying on the coasts and rivers, the interior of the country being covered for the most part by a virgin forest, which is rich in rattans, rubber, damar, and jungle produce.

Lately the Sultan has been building a railroad into the heart of this section, which will eventually open it up to plantations.

In the north of Johore is the famous Mount Ophir, of Bible fame, which is over 4,000 feet high. At its base the natives have found gold and tin, but as yet it has not been systematically and scientifically explored.

The population of the country is remarkable for containing a larger number of Chinese than Malays. The Chinese are chiefly found as cultivators of gambier and pepper, which are the principal products of export to Singapore. Sago, coffee, tea, and cocoa are grown with varying success.

As nearly all the export of the country goes to Singapore, a table drawn from the blue book of 1891 will give a fair idea of its agricultural and mineral output.

In minerals the little Kingdom is peculiarly rich. Iron is found almost everywhere. Float tin is found in paying quantities and is mined at Sebuang. Within a month rich deposits of the metal have been discovered on the Johore River within 15 miles of Singapore. The Sultan is very generous to firms and persons wishing to either mine or farm. He gives them the land rent free and untaxed for as long a time as they wish to hold it; they simply pay a small royalty on metals or a small export tax on gambier and some of the products of the soil. It is this wise policy that has brought 175,000 Chinese laborers to his country. These Chinese subjects, although by nature indifferent to their ruler, are obedient and industrious subjects and the source of the principal revenue of the nation.

The country is traversed by three large rivers—the Muar, the Endau, and the Johore—and many smaller ones, making splendid natural highways into the interior. The capital town is Johore Bharu, or New Johore, which is separated from the island of Singapore by the Straits of Malacca and contains about 25,000 inhabitants. Close down to the water's edge is the Istana, or palace of the Sultan, backed by well-built Government buildings. The Sultan has two other palaces, one in his out province Muar and the other, which is just finished, in Singapore. He keeps up a select stud of imported horses, and is much given to entertaining. The plate in his palace is all of gold, and it is said that he is the possessor of $10,000,000 worth of diamonds.

As I have said, the Sultan's expectation is to exhibit at the exposition all the products of his beautiful country and thereby interest American capital and American "push" in its development. He hopes to leave Johore with his secretary, Dato (lord) Sri Amar d'Raja, who is a companion of the English order of St. Michael and St. George, and suite of princes about the last of next April, going to Carlsbad for a month for the waters; from there to London, where he will be entertained by the Queen; then proceed-

ing to New York, arriving about the 1st of July. He will spend fully three months in the United States, visiting all its important cities, with an object of making contracts for mining, electric-light, and other machinery.

There is no blue book published in Johore, and no authoritative facts can be cited in regard to the full export of the country; so I append its imports from and exports to the Straits Settlements for the years 1890 and 1891. It will be seen that there was a material decrease for the year 1891. This was caused in a large measure by the failures of large firms in Singapore and the low prices prevailing on the exchange. The present year opens with brighter prospects, and it is confidently expected that the year 1892 will show a large increase over 1890.

Table showing the value of imports from and exports to the Straits Settlements.

Year.	Imports.	Exports.
1890	$3,627,484	$6,525,680
1891	3,062,142	4,827,801

This leaves the balance of trade in favor of Johore by a large per cent.

ROUNSEVELLE WILDMAN,
Consul.

UNITED STATES CONSULATE,
Singapore, July 25, 1892.

CATTLE-RAISING IN THE AUSTRIAN ALPS.

REPORT BY CONSUL HAWES, OF REICHENBERG.

In the last volume of the imperial royal central commission's monthly publication Prof. Dr. Wilckens describes the condition of cattle from 1880 to 1890 in the cattle-raising districts of the Austrian Alps, viz, Peuzgau, Mürzthal, Murboden, Levanthal, Zitterthal, Pufluthal, and Montavon.

Prof. Wilckens shows a decrease in cattle-raising in certain districts of 10 to 42, and in Mürzthal of even 58, per cent. He gives as a cause that in many communities, especially in Mürzthal, estates have been bought and planted with forests in order to be used for hunting purposes. Thus an estate of more than 5,000 joch, belonging to the St. Ilgen community, with pasturage for 300 head of cattle, and a neighboring estate of 700 joch were turned into hunting grounds. This was also the case with the Höllalpe, affording a pasturage for 200 head of cattle. In the district Aplenz, between the years 1880 and 1890, no less than forty-seven estates, pasturing 820 head of cattle, were bought and turned into hunting grounds. In the district Mariazell, on the Kräuterin, up to five years ago 800 oxen were pastured. For the last two years this territory has also been devoted to the hunt.

Rosegger has most poetically described this disappearance of work for the peasant in his novel "Jakob der Letzte."

The condition of the peasant and the raising of cattle are approaching a crisis, the result of which will be the further reduction of cattle-raising, which will be confined to the most profitable varieties. A second important cause of the decrease is a lack of laborers. In Mürzthal a male laborer receives $40 yearly and a female $24, with food. A third cause is the indebtedness of the peasants. Lands are allowed to run down. Fertilizing of pasturage seldom takes place. Manure is reserved for grain. Everything is cultivated that the peasant himself needs—wheat for cake, rye for bread, oats for horses, flax for clothing and bedding. Cattle furnish the peasant with milk, meat, and leather; sheep furnish him wool, and geese feathers. In short, the Alpine peasant is of the opinion that all his needs must be supplied from his own farm. This simple management is destroying him, because all his productions are below mediocrity. The cow need not furnish him with more milk than he needs for his household. If more is produced, the peasant and his household simply consume more milk and butter. Custom in the Austrian Alps does not permit milk and butter to be sold. Only in Tyrol, Vorarlberg, and Kürnten are there a few milk companies which collect the milk and dispose of it.

The cultivation of grain in most Alpine lands is not profitable, though this is not generally recognized, as the peasant keeps no accounts. In one of the best farms in Mürzthal the farmer succeeds in getting from a crop of barley not more than every seventh grain. In the mountains not more than one in five is recovered. It is, however, not known. Grain, fodder, or milk is not measured or weighed. They do not wish to know the truth. Only by his increasing debts does the peasant know that he has managed badly, but this knowledge comes generally too late and costs him his house and lands.

All these facts go to account for the decrease in cattle-raising in the Alps, where, betweeen the years 1880 and 1890, the number of cattle has decreased 10,024 head, or 6 per cent, whereas the population has increased about 4 per cent. In these Alpine districts are the only pure-blooded Austrian cattle, and these should be preserved. Moreover, Austria has a limited supply of cattle, and can not afford to have this supply decreased.

Good cheese must even now be imported. In 1891 the import of cheese amounted to 1,772,000 kilograms, while there were only 481,700 kilograms exported.

All this may be of interest to America, which is always seeking new markets for her beef, and I venture to predict that within the next decade Austria will also become one of our good customers.

JNO. B. HAWES,
Consul.

UNITED STATES CONSULATE,
Reichenberg, September 5, 1892.

INDEX.

[VOL. XL (NOS. 144, 145, 146, AND 147), CONSULAR REPORTS.]

A.

Page.

Abbott, J. T. (minister, Bogotá), San Blas coast and people..... 250
Adulteration and improvement of German wine..... 277
Africa:
British Africa—
Natal:
Declared exports from..... 245
Exports from..... 241
Harbor works of..... 243
Imports into..... 240
Shipping at..... 244
Trade and commerce of..... 240
St. Helena, affairs at..... 548
Sierra Leone, affairs in..... 323
Egypt—
Cotton-crop report..... 22
Cotton in..... 112
Crops of 1892..... 358
Weights and measures in..... 135
French Africa—
Senegal-Pernambuco cable..... 589
Kongo Free State—
Trade in the..... 443
Madagascar—
American imports into..... 436
interests in..... 436
Banking in..... 440
Copper, iron, and lead in..... 438
Exports from, to the United States..... 438
Gold in..... 438
Transportation in..... 438
Orange Free State..... 160
(Commerce, 160—finance, 161—labor, 161—mining, 162—public works, 162—education, 162.)
Portuguese Africa—
Angola:
Boers in..... 581
Commerce of, in 1891..... 535
Education in..... 582
Ethnography of..... 570
Produce and resources of..... 568
Province of..... 566

Page.

Africa—Continued.
Portuguese Africa—Continued.
Angola—Continued.
Religion of..... 576
Slavery in..... 576
Trade and shipping of..... 569
Whites in..... 579
South Africa, corn crop in..... 143
Spanish Africa—
Canary Islands:
Canary orchilla..... 304
Agricultural implements in Spain..... 167
Agriculture in Belgium..... 476
Ghent..... 3
Hongkong..... 376
San Blas..... 252
Tahiti..... 635
of Manitoba..... 434
Almonds in Malaga..... 525
Alps, Austrian, cattle-raising in the..... 647
America:
North America—
Canada:
Canadian revenue..... 433
statistics..... 456
Crops of 1892..... 361
Manitoba—
Agriculture of..... 434
Area of the Winnipeg district..... 430
Commerce of..... 430
Exports from..... 433
Fisheries of..... 434
Imports into..... 430
Railway construction in..... 435
Wheat losses in, in 1891..... 328
Ontario, exports from, to the United States..... 454
Central America:
Honduras, climate of..... 144
Nicaragua—
Coffee-planting in..... 534
Fibers of..... 441
Ficus elastica of..... 168
Immigration law of..... 533
Matagalpa, department of..... 531
Nicaraguan statistics..... 531
Sugar-refining in..... 516
Mexico:
Banks in..... 393
Carriages, wagons, and trucks in..... 398
Coahuila, commerce and industries of..... 591
Coal in..... 592
Cotton in..... 394

Page.

America—Continued.
North America—Continued.
Mexico—Continued.
Customs fines in..... 388
rules in..... 387
Cutlery in..... 403
Exports from.....46, 594
Flax manufactures in..... 404
Food and food products in..... 400
Glass and glassware in..... 409
Hardware in..... 403
Hemp manufactures in..... 404
House furnishings in..... 401
Imports into..... 598
Jewelers' wares in..... 411
Leather and rubber goods in..... 405
License tax in..... 390
Machinery in..... 406
Maritime movement in..... 540
Matamoros, affairs in..... 555
Mining in..... 592
laws of..... 459
Musical instruments in..... 406
Nuevo Laredo and Veracruz customs statistics..... 556
Oranges from, for the United States..... 166
Paints and oils in..... 408
Paper and stationery in..... 409
Population of..... 385
Prices and freight rates in..... 393
Railroads in..... 594
Rates of interest in..... 393
Raw material in..... 393
Ribbons in..... 397
Silks in..... 397
Silver in..... 592
Sonora, coal in..... 162
Stock-raising in..... 593
Tariff changes in..... 426
of..... 387
Thread in..... 396
Trade in, and how to secure it..... 385
Tuxpan, affairs in.....20, 618
Twine and cordage in..... 397
Veracruz and Nuevo Laredo customs statistics..... 556
customs statistics..... 556
Wearing apparel in..... 411
Weights and measures in..... 389
Wines and liquors in..... 406
Woolen piece goods in..... 396
Worsted goods in..... 396
Yucatan, commercial..... 505
hennequen fiber in..... 506

Page

America—Continued.
North America—Continued.
United States:
Crops of 1892 ... 361
Emigration to, from Rotterdam ... 138
Exports to, from Ghent ... 5
Hongkong ... 367
Huddersfield ... 147
Malaga ... 527
Italian exports to ... 504
Mexican oranges for ... 166
South America—
Brazil:
Pernambuco-Senegal cable ... 584
British Guiana:
Demerara, exports from ... 99
imports into ... 93
shipping at ... 103
People, industries, and trade of ... 73
Colombia:
Comino tree in ... 614
Magdalena River and Valley ... 121
San Blas, agriculture in ... 252
coast and people ... 250
exports from ... 252
gulf of ... 250
imports into ... 252
population of ... 252
ports of ... 250
vital statistics of ... 252
Ecuador:
Cacao in ... 59
Peru:
Peruvian ramie ... 254
Uruguay:
Imports and exports of ... 167
Rainfall in ... 165
West Indies—
British West Indies:
Antigua trade tax ... 168
Bahamas, fertilizers in the ... 253
Barbados, trade of ... 619
Jamaica, fertilizers in ... 35
Leeward Islands, limes and lime trees in ... 519
St. Christopher, fertilizers in ... 38
Trinidad, asphalt of ... 169
Danish West Indies:
Christiansted, exports from, 1892 ... 313
Commerce of ... 305
Fredericksted, shipping at, 1892 ... 312
St. Croix, commerce of ... 313
exports from, 1892 ... 313

Page.
America—Continued.
West Indies—Continued.
Danish West Indies—Continued.
St. Thomas, exports from, 1892 309
imports into, 1892 305
Fertilizers in the 35
French West Indies:
Guadeloupe, staves in 273
Martinique, fertilizers in 36
Spanish West Indies:
Matanzas, fertilizers in 37
American and Spanish American trade relations 583
flour in Hongkong 382
grain in Spain 324
imports into Madagascar 436
interests in Madagascar 436
patents in Europe 14
pork, German duties on 487
products in China 381
Seville 12
Russian, and Sumatra petroleum 456
trade, how to increase 446
in Eastern Asia 644
Americans in Jerusalem 281
Liverpool 365
Amsterdam-Rhine canal 484
trade and industries of 314
Anderson, T. H. (minister, La Paz, Bolivia), American and Spanish American trade relations 583
Angola, Boers in 581
commerce of, in 1891 535
education in 582
ethnography of 570
produce and resources of 568
religion of 576
slavery in 576
the province of 566
trade and shipping of 569
whites in 579
Aptigua trade tax 168
Antwerp, commerce of 480
Arms and armor, Chinese 489
Asia:
British Asia—
British East India:
Crops of 1892 359
Punjab, streets and highways in the 528
Tussah silk 300
Hongkong:
A free port 366
Agriculture in 376

Page.

Asia—Continued.
British Asia—Continued.
Hongkong—Continued.
American flour in..... 382
products in China..... 381
Budget of..... 377
Coal imports of..... 379
Emigration from..... 374
Exports from, to the United States..... 367
Fisheries in..... 376
Forests of..... 373
Immigration into..... 374
Kerosene tank steamer in..... 379
Manufactures in..... 375
Mines in..... 373
Pensions in..... 376
Population of..... 375
Quarries in..... 373
Revenue of..... 377
Shipping at..... 373
Statistics..... 366
Wages in..... 376
Straits Settlements:
Singapore, trade of..... 21
China—
Arms and armor in..... 489
Carvings in..... 501
Cash in..... 499
Chin-Kiang, trade of, in 1891..... 507
Cotton manufactures in..... 296
Curios in..... 489
Exports from..... 20
Extension of Chinese trade..... 561
Foreign trade of..... 19
Imports into..... 19
Josses in..... 496
Ningpo, kerosene-oil trade of..... 282
Shipping in..... 20
Soapstone figures in..... 497
Tea-root carvings in..... 500
Trade extension in..... 561
Dutch India:
Sumatra, American, and Russian petroleum..... 456
Eastern Asia, American trade in..... 644
Japan—
Butter and butterine in..... 479
Camphor trade of..... 55
Hiogo, cholera in..... 72
exports from..... 72
imports into..... 71
Osaka and Hiogo, cholera in..... 72
shipping at..... 72
Trade and commerce of..... 71

Page.

Asia—Continued.
Johore—
Sultanate of..... 645
Tea in..... 549
Tin in..... 646
Palestine—
Jerusalem, Americans in..... 281
Asphalt of Trinidad..... 169
Aubusson tapestries..... 49
Australian pearl-button shells..... 70
Austria, crops of 1892..... 329
stoves in..... 32
Austria-Hungary, the new currency of..... 623
Austrian Alps, cattle-raising in the..... 647
hops..... 263
postal savings bank..... 148

B.

Baden, hops in..... 54
Bahamas, fertilizers in the..... 253
Bank, savings, Austrian postal..... 148
Banking in Madagascar..... 440
Banks in Mexico..... 393
Barbados, trade of..... 619
Bartlett, C. (consul, Guadeloupe), staves in Guadeloupe..... 273
Beauvais tapestries..... 49
Bedloe, E. (consul, Amoy), Chinese curios..... 489
Beet-root sugar in Ghent..... 3
Belgium, commerce and industries of..... 476
crops of 1892..... 346
hop culture in..... 10
Boers in Angola..... 581
Bowen, H. W. (consul, Barcelona), food prices in European cities..... 552
origin of Spanish titles..... 327
railways, highways, and bridges in Spain..... 248
Bowser, B. (consul, Sierra Leone), affairs in Sierra Leone..... 323
Brandy in Malaga..... 525
Bridges, railways, and highways in Spain..... 248
Bruce, W. (consul, Leith), factories and workshops in Great Britain..... 140
Budget of Hongkong..... 377
Butter and butterine in Japan..... 479
Butterine and butter in Japan..... 479
in Malta..... 134
Butter-making in Finistère..... 615

C.

Cable, Pernambuco-Senegal..... 589
Cacao in Ecuador..... 59
Camphor, manufacture of..... 57
trade of Japan..... 55
Canada, crops of, in 1892..... 361
Canal, Amsterdam-Rhine..... 484
the Merwede..... 321
Canary orchilla..... 304

	Page.
Carriages, wagons, and trucks in Mexico	398
Carroll, P. (consul, Demerara), people, industries, and trade of British Guiana	73
Carvings, Chinese	501
Cash, Chinese	499
Catlin, G. L. (consul, Zurich), silk industry of Zurich in 1891	291
Cattle-raising in the Austrian Alps	647
Cement and paper in Belgium	478
Cereals in Ghent	3
Chatelaine, H. (commercial agent, Loanda), commerce of Angola in 1891	535
the province of Angola	566
Cheney, E. H. (consul, Matanzas), fertilizers in Matanzas	37
Chicory	7
China, American products in	381
cotton manufactures in	296
foreign trade of	19
Chinese curios	489
trade, extension of	561
Chin-Kiang, trade of, in 1891	507
Cholera in Hiogo	72
Osaka	72
Russia	412
Coahuila, commerce and industries of	591
Coal, imports of Hongkong	379
in Belgium	477
Mexico	592
Sonora	162
mines of Vancouver Island	23
Coffee-planting in Nicaragua	534
Coffin, J. B. (consul, St. Helena), affairs at St. Helena	548
Colombia, comino tree in	614
Comino crespo (tree)	614
Commerce and industries of Coahuila	591
of Angola in 1891	535
Conduits and electricity in Havre	58
Copper in Madagascar	438
Copra in Tahiti	637
Corn crop in South Africa	143
Cost of living and wages in Milan	600
Cotton-crop report, Egyptian	22
in Egypt	112
industries of the world, wages in	450
manufactures in China	296
Cottons in Mexico	394
Crawford, J. (Leon, Nicaragua), ficus elastica of Nicaragua	168
Crawford, J. M. (consul-general, St. Petersburg), cholera in Russia	412
crop shortage in Finland	425
Crop, corn, in South Africa	143
German hop, of 1892	33
hop, of Austria-Hungary, 1892	361
report, Egyptian cotton	22
shortage in Finland	425
the world's sugar, of 1892	617

Page.
Crops, German and English hop..... 383
of Austria, 1892..... 329
Austria-Hungary, 1892.....334, 361
British East India, 1892..... 359
Canada, 1892..... 361
Denmark, 1892..... 344
Egypt, 1892..... 358
France, 1892..... 346
Germany, 1892..... 337
Holland, 1892..... 345
Hungary, 1892..... 331
Italy, 1892..... 347
Roumania, 1892..... 349
Russia, 1892..... 353
Servia, 1892..... 348
Sweden and Norway, 1892..... 345
Switzerland, 1892..... 345
the United Kingdom, 1892..... 346
United States, 1892..... 361
the world's 1892..... 329
Curios, Chinese..... 489
Currency, the new, of Austria-Hungary..... 623
Customs receipts of Spain..... 488
rules, Mexican..... 387
statistics of Veracruz and Nuevo Laredo..... 556
Cutlery in Mexico..... 403

D.

Danforth, J. R. (consul, Liege), staves in Liege..... 249
Declared exports from Natal..... 245
Denby, C. (minister, Peking), foreign trade of China..... 19
Denmark, crops of 1892..... 344
land area of..... 325
Diamonds and diamond industry in Amsterdam..... 320
in Belgium..... 477
Dimmick, E. A. (consul, Barbados), trade of Barbados..... 619
Docks of Amsterdam..... 322
Doty, J. L. (consul, Tahiti), Tahiti..... 634
Dougherty, C. A. (secretary of legation, Mexico), Mexican tariff changes..... 426
Drayton, J. (consul, Tuxpan), affairs in Tuxpan.....20, 618
Dupin, H. de S. (consul, Nantes), butter-making in Finistère..... 615
Duties, German, on American pork..... 487

E.

Ecuador, cacao in..... 59
Education in Angola..... 582
Edwards, W. H. (consul-general, Berlin), German duties on American pork..... 487
imports and exports by countries..... 530
peanut refuse..... 72
sulphuring hops in Germany..... 69
Egypt, cotton-crop report..... 22
in..... 112
crops of..... 358
weights and measures of..... 135

Page.
Electricity and conduits in Havre..... 58
Emigration from Antwerp..... 482
Hongkong..... 374
Rotterdam to the United States..... 138
English and German hop crops..... 383
hops..... 603
Esparto grass, Spanish..... 382
Ethnography of Angola..... 570
Europe:
American patents in..... 14
Austria-Hungary—
Austria:
Cattle-raising in the Austrian Alps..... 647
Crops of 1892..... 329
Hops in..... 263
Postal savings bank in..... 148
Stoves in..... 32
Crops of 1892.....334, 361
Hop crop of 1892..... 361
Hungary, crops of 1892..... 331
The new currency of..... 623
Belgium—
Antwerp, commerce of..... 480
(Coffee, 480—cocoa, 480—cereals, 480—flour, 480—cotton, 480—hemp, 480—honey, 480—horns, 481—hides, 481—lard, 481—petroleum, 481—rice, 481—resin, 482—salt provisions, 482—oleaginous seeds, 482—turpentine, 482—tobacco, 482—building timber, 482—cabinet woods, 482.)
Exports from..... 482
Navigation at..... 482
Belgian wages..... 6
Commerce and industries of..... 476
(Agriculture, 476—breweries, 476—bricks, 477—coal, 477—diamonds, 477—distilleries, 477—rice-starch factories, 477—rice mills, 477—ship-building, 478—sugar-refining, 478—sulphur-refining, 478—wool-combing, 478—cement and paper, 478—railroads, 479.)
Crops of 1892..... 346
Ghent, agriculture in..... 3
beet-root sugar in..... 3
cereals in..... 3
cotton-spinning in..... 1
exports from, to the United States..... 5
flax and tow spinning in..... 1
horticulture in..... 2
jute-spinning in..... 2
linen-weaving in..... 2
paper stock from..... 5
the port of..... 4
trade and industries of..... 1
Hop culture in..... 10
Liege, staves in..... 249
Wages in the cotton industries of the world..... 450

Page.

Europe—Continued.
Denmark—
Crops of 1892 344
Land area of 325
France—
Aubusson tapestries 49
Beauvais tapestries 49
Crops of 1892 346
Finistère, butter-making in 615
Gobelin tapestries 49
Havre, electricity and conduits in 58
Marseilles, port of 509
Rouen, port and trade of 523
Germany—
Crops of 1892 337
Duties in, on American pork 487
Exports from, in 1891 522
German and English hop crops 383
Foreign trade 522
Hesse, food prices in 274
Hop crop of 1892 33
product of Germany and Europe 246
Hops in Baden 54
Rhein-Hessen 54
the Palatinate 54
Imports and exports by countries 530
into, 1891 522
Improvement and adulteration of wine in 277
Rhine-Amsterdam canal 484
vintage 486
Sulphuring of hops in 69
Wages in 302
Wine, improvement and adulteration of, in 277
Italy—
Crops of 1892 347
Italian exports to the United States 504
Milan, wages and cost of living in 600
Palermo, trade and commerce of 255
Netherlands—
Amsterdam, diamonds and diamond industry in 320
docks of 322
exports from 319
imports into 315, 322
Rhine canal 484
shipping at, 1891 321
trade and industries of 314
Holland, crops of 1892 345
Merwede canal 321
Rotterdam, emigration from, to the United States 138
Ymuiden 322
Roumania—
Crops of 1892 349

Page.

Europe—Continued.
Russia—
Cholera in..... 412
Crops of 1892..... 353
Finland, crop shortage in..... 425
Revel, exports from..... 67
imports into..... 66
navigation of..... 68
trade of..... 66
Russian, American, and Sumatra petroleum..... 456
Servia—
Crops of 1892..... 348
Spain—
Agricultural implements in..... 167
American grain in..... 324
Customs receipts of..... 488
Imports and exports of..... 483
Malaga, almonds in..... 525
brandy in..... 525
exports from, to the United States..... 527
finances of..... 528
grapes..... 525
iron ore in..... 526
lead in..... 526
lemons in..... 526
machinery in..... 528
oil of geranium in..... 526
oranges in..... 526
palm-leaf hats in..... 526
raisins in..... 526
trade and commerce of..... 525
wine in..... 527
Origin of Spanish titles..... 327
Railways, highways, and bridges in..... 248
Seville, American products in..... 12
Spanish-American and American trade relations..... 583
esparto grass..... 382
wines..... 42
Steamship building in..... 641
Sweden and Norway—
Crops of 1892..... 345
Switzerland—
Crops of 1892..... 345
Zurich, silk industry of, in 1891..... 291
United Kingdom—
Crops of 1892..... 346
English and German hop crops..... 383
hops..... 603
Factories and workshops in Great Britain..... 140
Gibraltar, affairs in..... 245
commerce and navigation at..... 298
Huddersfield exports to the United States..... 147

Page.

Europe—Continued.
United Kingdom--Continued.
Liverpool, Americans in..... 365
wages in..... 447
Malta, butterine in..... 134
Railway rates in Great Britain..... 280
Wages of telegraphers in Great Britain..... 47
European cities, food prices in..... 552
Exports and imports, German, by countries..... 530
of Spain..... 483
Uruguay..... 167
declared, from Natal..... 245
from Amsterdam..... 319
Antwerp..... 482
China..... 20
Christiansted, 1892..... 313
Demerara..... 99
Germany, 1891..... 522
Ghent, to the United States..... 5
Hiogo..... 72
Hongkong, to the United States..... 367
Madagascar. to the United States..... 438
Manitoba..... 433
Mexico..... 594
Natal..... 241
Ontario, to the United States..... 454
Revel..... 67
St. Croix, 1892..... 313
St. Thomas, 1892..... 309
San Blas..... 252
Tahiti..... 637
Huddersfield, to the United States..... 147
Italian, to the United States..... 504
Mexican..... 46
to the United States from Malaga..... 527

F.

Factories and workshops in Great Britain..... 140
Fechet, E. O. (consul, Piedras Negras), commerce and industries of Coahuila..... 591
Mexican trade and how to secure it..... 385
Fertilizers in Jamaica..... 35
Martinique..... 36
Matanzas..... 37
St. Christopher..... 38
St. Thomas..... 37
the Bahamas..... 253
West Indies..... 35
Trinidad..... 39
Fiber, hennequen, in Yucatan..... 506
Fibers of Nicaragua..... 441
Ficus elastica of Nicaragua..... 168
Finistère, butter-making in..... 615

Page.
Finland, crop shortage in 425
Fisheries in Hongkong 376
of Manitoba 434
Flax and tow spinning in Ghent 1
manufactures in Mexico 404
Flour, American, in Hongkong 382
Food prices in European cities 552
Hesse 274
Fowler, J. (consul, Ningpo), kerosene-oil trade of Ningpo 282
the extension of Chinese trade 561
Fredericksted, shipping at 312
French tapestries 49

G.

Galbraith, S. (vice-consul, Antigua), Antigua trade tax 168
limes and lime trees in the Leeward Islands 519
Gardner, W. E. (consul, Rotterdam), emigration from Rotterdam to the United States .. 138
German and English hop crops 383
duties on American pork 487
foreign trade 522
hop crop of 1892 33
imports and exports by countries 530
wine, improvement and adulteration of 277
Germany and Europe, hop product of 246
crops of 1892 337
sulphuring hops in 69
Ghent, trade and industries of 1
Gibraltar, affairs in 145
commerce and navigation at 298
Glass and glassware in Mexico 409
Gobelin tapestries 49
Gold in Madagascar 438
Goldschmidt, J. (consul-general, Vienna), American patents in Europe 14
Austrian hops 263
Austrian postal savings bank 148
stoves in Austria 32
the world's 1892 crops 329
Gracey, S. L. (consul, Fuchau), cotton manufactures in China 296
Grain, American, in Spain 324
Grant, L. B. (acting consul-general, Cairo), cotton in Egypt 112
Egyptian cotton-crop report 22
weights and measures 135
Grapes, Malaga 525
Grass, Spanish esparto 382
Great Britain and Ireland crops of 1892 346
factories and workshops in 140
railway rates in 280
wages of telegraphers in 47
Guadeloupe, staves in 273
Guenther, R. (consul-general, Mexico), Mexican exports 46
Guiana (British), people, industries, and trade of 73
Gulf of San Blas 250

H.

	Page.
Hall, J. A. (consular agent, Jeres de la Frontera), plastering of wires in Jeres	43
Harbor works of Natal	243
Hardware in Mexico	403
Hats, palm-leaf, in Malaga	526
Havre, electricity and conduits in	58
Hawes, J. B. (consul, Reichenberg), cattle-raising in the Austrian Alps	647
Hemp manufactures in Mexico	404
Hennequen fiber in Yucatan	506
Hesse, food prices in	274
Highways and streets in the Punjab	528
railways, and bridges in Spain	248
Hill, F. D. (consul, Montevideo), imports and exports of Uruguay	167
rainfall in Uruguay	165
Hiogo, trade and commerce of	71
Holland, crops of 1892	345
Hollis, W. S. (consular agent, Durban), corn crop in South Africa	143
trade and commerce of Natal	240
Honduras, climate of	144
Hongkong statistics	366
Hop crop, German, of 1892	33
of Austria-Hungary, 1892	361
crops, German and English	383
culture in Belgium	10
product of Germany and Europe	246
Hops, Austrian	263
English	603
in Baden	54
Rhein-Hessen	54
the Palatinate	54
sulphuring of, in Germany	69
Horne, S. B. (consul, St. Thomas), commerce of the Danish West Indies	305
fertilizers in St. Thomas	37
Horticulture in Ghent	2
Howard, W. E. (consul, Cardiff), the future of the tin-plate industry	109
Huddersfield exports to the United States	147
Hungary, crops of 1892	331

I.

Immigration into Hongkong	374
law of Nicaragua	533
Imports, American, into Madagascar	436
and exports, German, by countries	530
of Spain	483
Uruguay	167
coal, of Hongkong	379
into Amsterdam	322
China	19
Demerara	93
Germany, 1891	522
Hiogo	71
Manitoba	430
Mexico	598

	Page.
Imports into Natal	240
Revel	66
St. Thomas, 1892	305
San Blas	252
Tahiti	639
India, British East, crops of 1892	359
Iron in Madagascar	438
ore in Malaga	526
Italy, crops of 1892	347

J.

Japan, butter and butterine in	479
camphor trade of	55
Jamaica, fertilizers in	35
Jerusalem, Americans in	281
Johore, Sultanate of	645
tea	549
tin in	646
Jones, A. C. (consul, Chin-Kiang), trade of Chin-Kiang in 1891	587
Jones, A. C. (consul, Nagasaki), manufacture of camphor	57
Josses, Chinese	496
Jouhannaud, A. (vice-commercial agent, Limoges), tapestry manufacture at Aubusson	53
Jute-spinning in Ghent	2

K.

Keevil, A. B. (consul, St. Pierre), fertilizers in Martinique	36
Kerosene-oil trade of Ningpo	282
tank steamer in Hongkong	379
King, A. E. (consul-general, Paris), French tapestries	49
Knowles, H. G. (consul, Bordeaux), trees in French cities	163
Kongo Free State, trade in the	443

L.

Lace, handmade, in Ghent	7
Lallier, P. (vice-consul, Teneriffe), Canary orchilla	304
Land area of Denmark	325
Landgraf, E. R. (consular agent, Bloemfontein), the Orange Free State	160
Law, immigration, of Nicaragua	533
Laws, mining, of Mexico	459
Lead in Madagascar	438
Malaga	526
Leather in Mexico	405
Lemons in Malaga	526
Liege, staves in	249
Limes and lime trees in the Leeward Islands	519
Lincoln, G. F. (consul, Antwerp), commerce and industries of Belgium	476
of Antwerp	480
wages in the cotton industries of the world	450
Linen-weaving in Ghent	2
Liverpool, Americans in	365
wages in	447

M.

Page.
Maass, O. (vice-consul-general, Vienna), the new currency of Austria-Hungary..... 623
Machinery in Malaga..... 528
Mexico..... 406
McLain, T. J. (consul, Nassau), fertilizers in the Bahamas..... 253
Madagascar, American interests in..... 436
Magdalena River and Valley..... 121
Malaga, almonds in..... 525
brandy in..... 525
exports from the United States..... 527
finances of..... 528
grapes..... 525
iron ore in..... 526
lead in..... 526
lemons in..... 526
machinery in..... 528
oil of geranium in..... 526
oranges in..... 526
palm-leaf hats in..... 526
raisins in..... 526
trade and commerce of..... 525
wine in..... 527
Malta, butterine in..... 134
Manitoba, commerce of..... 430
wheat losses in, in 1891..... 328
Manufactures in Hongkong..... 375
Maritime movement, Mexican..... 540
Marseilles, port of..... 509
Martinique, fertilizers in..... 36
Mason, F. H. (consul-general, Frankfort), German and English hop crops..... 383
hop crop of 1892..... 33
hop product of Germany and Europe..... 246
the world's sugar crop of 1892..... 617
Matamoros, affairs in..... 555
Matanzas, fertilizers in..... 37
Measures and weights in Mexico..... 389
Merrill, Samuel (consul-general, Calcutta), streets and highways in the Punjab..... 528
Tussah silk..... 300
Merrill, Selah (consul, Jerusalem), Americans in Jerusalem..... 281
Merwede Canal..... 321
Mexican exports..... 46
oranges for the United States..... 166
tariff changes..... 426
trade and how to secure it..... 385
Mexico, mining laws of..... 459
Milan, wages and cost of living in..... 600
Mines, coal, of Vancouver Island..... 23
in Hongkong..... 373
Mining in Mexico..... 592
the Orange Free State..... 162
laws of Mexico..... 459
Mohun, R. Dorsey (commercial agent, Boma), trade of the Kongo Free State..... 443

Page.
Monaghan, W. (consul, Hamilton), exports from Ontario to the United States..... 454
Moore, W. F. (consular agent, Fredericksted), Fredericksted..... 312
Mother-of-pearl in Tahiti..... 637
Murphy, G. H. (consular agent, Berlin), German foreign trade..... 522
Musical instruments in Mexico..... 407
Myers, L. W. (consul, Victoria), coal mines of Vancouver Island..... 23

N.

Natal, trade and commerce of..... 240
Navigation at Antwerp..... 482
St. Thomas, 1892..... 310
Neill, R. R. (secretary of legation, Lima), Peruvian ramie..... 254
New, J. C. (consul-general, London), English hops..... 603
Newell, W. (consul, Managua), fibers of Nicaragua..... 441
Nicaraguan statistics..... 531
sugar-refining in Nicaragua..... 516
Newson, T. M. (consul, Malaga), Spanish esparto grass..... 382
trade and commerce of Malaga..... 525
Nicaragua, fibers of..... 441
ficus elastica of..... 168
Nicaraguan statistics..... 531
Nickeus, J. (consul, Barranquilla), the Magdalena River and Valley..... 121
Ningpo, kerosene-oil trade of..... 282
Nuevo Laredo and Veracruz customs statistics..... 556

O.

Oil, kerosene, trade of Ningpo..... 282
of geranium in Malaga..... 526
Oils in Mexico..... 408
Ontario, exports from, to the United States..... 454
Orange Free State..... 160
commerce of..... 160
finances of..... 161
labor in..... 161
mining in..... 160
Oranges in Malaga..... 526
Mexican, for the United States..... 166
Orchilla, Canary..... 304
Osborne, J. B. (consul, Ghent), trade and industries of Ghent..... 1

P.

Paints in Mexico..... 408
Palatinate, hops in the..... 54
Palermo, trade and commerce of..... 255
Papéiti..... 634
Paper and stationery in Mexico..... 409
stock from Ghent..... 5
Parker, S. W. (consul, St. Christopher), fertilizers in St. Christopher..... 38
Patents, American, in Europe..... 14
Peanut refuse..... 72
Pearl-button shells, Australian..... 70
Pensions in Hongkong..... 376
Pepper, G. W. (consul, Milan), wages and cost of living in Milan..... 600

Page.
Pernambuco-Senegal cable..... 589
Peruvian ramie..... 254
Peterson, J. J. (consul, Tegucigalpa), climate of Honduras..... 144
Petroleum, American, Russian, and Sumatra..... 456
Pierce, W. P. (consul, Trinidad), asphalt of Trinidad..... 169
fertilizers in Trinidad..... 39
Plate, tin, industry, future of the..... 109
Polynesia:
Papéiti..... 634
Tahiti..... 634
agriculture in..... 635
copra in..... 637
exports from..... 637
government of..... 634
history of..... 634
imports into..... 639
mother-of-pearl in..... 637
shipping in..... 641
Population of Hongkong..... 375
Mexico..... 385
San Blas..... 252
Pork, American, German duties on..... 487
Port and trade of Rouen..... 523
Hongkong a free..... 366
of Ghent..... 4
Marseilles..... 509
Ports of San Blas..... 250
Postal savings bank, Austrian..... 148
Pugh, H. C. (consul, Palermo), trade and commerce of Palermo..... 255
Punjab, streets and highways in..... 528

Q.

Quarries in Hongkong..... 373

R.

Railroads in Belgium..... 479
Mexico..... 594
Railway construction in Manitoba..... 435
rates in Great Britain..... 280
the transsiberian..... 303
Railways, highways, and bridges in Spain..... 248
Raisins in Malaga..... 526
Ramie, Peruvian..... 254
Religion of Angola..... 576
Revel, trade of..... 66
Revenue, Canadian..... 433
of Hongkong..... 377
Rhein-Hessen, hops in..... 54
Rhine-Amsterdam canal..... 484
vintage..... 486
Ribbons in Mexico..... 397
Richardson, J. B. (consul, Matamoros), affairs in Matamoros..... 555
Roosevelt, G. W. (consul, Brussels), hop culture in Belgium..... 10

Page.

Rotterdam, emigration from, to the United States..... 138
Rouen, port and trade of..... 525
Roumania, crops of 1892..... 349
Rubber goods in Mexico..... 405
Russia, cholera in..... 412
crops of 1892..... 353
Russian, American, and Sumatra petroleum..... 456
Ryan, T. (minister, Mexico), Mexican maritime movement..... 540
mining laws of Mexico..... 459
Ryder, H. B. (consul, Copenhagen), land area of Denmark..... 325

S.

St. Christopher, fertilizers in..... 38
St. Croix, commerce of..... 313
St. Helena, affairs at..... 548
St. Thomas, fertilizers in..... 37
navigation at, 1892..... 310
San Blas coast and people..... 250
Santa Maria, L. (vice-consul, Medellin), the comino tree of Colombia..... 614
Savings bank, Austrian postal..... 148
Schleier, T. M. (consul, Amsterdam), Amsterdam-Rhine canal..... 484
trade and industries of Amsterdam..... 314
Schmidt, J. (consular agent, Seville), American products in Seville..... 12
Senegal-Pernambuco cable..... 589
Servia, crops of 1892..... 348
Seville, American products in..... 12
Seymour, C. (consul, Canton), American trade in eastern Asia..... 644
Shells, Australian pearl-button..... 70
Sherman, T. H. (consul, Liverpool), Americans in Liverpool..... 365
railway rates in Great Britain..... 280
wages in Liverpool..... 447
of telegraphers in Great Britain..... 47
Shipbuilding in Belgium..... 478
Shipping at Amsterdam, 1891..... 321
Christiansted, 1892..... 314
Demerara..... 103
Fredericksted, 1892..... 312
Hongkong..... 373
Natal..... 244
Osaka and Hiogo..... 72
Revel..... 68
in China..... 20
Tahiti..... 641
Sierra Leone, affairs in..... 323
Silk bolting cloth..... 295
dyeing..... 295
finishing..... 295
industry of Zurich in 1891..... 291
raw..... 294
Tussah..... 300
twisting..... 294
Silks in Mexico.....

Page.
Silver in Mexico 592
Simons, O. H. (consul, Hongkong), Hongkong statistics 366
Singapore, trade of 21
Slavery in Angola 575
Smith, D. H. (consul, Nogales), coal in Sonora 162
Mexican oranges for the United States 166
Smith, J. H. (commercial agent, Mayence), food prices in Hesse 274
improvement and adulteration of German wine 277
Rhine vintage 486
Smith, N. (consul, Three Rivers), how to increase American trade 446
Smithers, E. J. (consul, Osaka and Hiogo), butter and butterine in Japan 479
camphor trade of Japan 55
trade and commerce of Hiogo 71
Smyth, W. P. (commercial agent, Huddersfield), Huddersfield exports to the United States 147
Soapstone figures, Chinese 497
Sonora, coal in 162
Sorsby, W. B. (consul-general, Guayaquil), cacao in Ecuador 59
Spain, agricultural implements in 167
American grain in 324
customs receipts of 488
imports and exports of 483
railways, highways, and bridges in 248
steamship building in 641
Spanish American and American trade relations 583
esparto grass 382
titles, origin of 327
wines 42
Spinning, flax and tow, in Ghent 1
jute, in Ghent 2
Sprague, H. J. (consul, Gibraltar), affairs in Gibraltar 245
commerce and navigation at Gibraltar 298
Staves in Guadeloupe 273
Liege 249
Steamship building in Spain 641
Stevens, E. (consul, Pernambuco), Pernambuco-Senegal cable 589
Stoves in Austria 32
Strauss, Louis, wages in the cotton industry 451
Streets and highways in the Punjab 528
Sugar, beet-root, in Ghent 3
crop, the world's, of 1892 617
refining in Belgium 478
Nicaragua 516
Sulphuring hops in Germany 69
Sumatra, Russian, and American petroleum 456
Sutton, W. P. (consul-general, Nuevo Laredo), Veracruz and Nuevo Laredo customs statistics 556
Sweden and Norway, crops of 1892 345
Switzerland, crops of 1892 345

T.

	Page.
Tahiti	634
agriculture in	635
copra in	637
exports from	637
government of	634
history of	634
imports into	639
mother-of-pearl in	637
shipping in	641
Tapestries, French	49
Gobelin, Beauvais, and Aubusson	49
Tariff changes, Mexican	426
Mexican	387
Tax, Antigua trade	168
license, in Mexico	390
Taylor, J. L. (consular agent, Christiansted), St. Croix	313
Taylor, J. W. (consul, Winnipeg), commerce of Manitoba	430
wheat losses in Manitoba in 1891	328
Tea, Johore	549
-root carvings, Chinese	500
Telegraphers in Great Britain, wages of	47
Thompson, E. H. (consul, Merida), commercial Yucatan	505
Thread in Mexico	396
Tin in Johore	646
-plate industry, the future of the	109
Titles, Spanish, origin of	327
Tow and flax spinning in Ghent	1
Trail, C. B. (consul, Marseilles), port of Marseilles	509
tapestry manufacture at Nimes	53
Transsiberian railway	303
Trees in French cities	163
Trinidad, asphalt of	169
fertilizers in	39
Turner, R. W. (consul, Cadiz), agricultural implements in Spain	167
American grain in Spain	324
customs receipts of Spain	488
imports and exports of Spain	483
Spanish wines	42
steamship building in Spain	641
Tussah silk	300
Tuxpan, affairs in	618
Twine and cordage in Mexico	397

U.

Uruguay, imports and exports of	167
rainfall in	165

V.

Vancouver Island, coal mines of	23
Veracruz and Nuevo Laredo customs statistics	556
Vintage, Rhine	486
Vital statistics of San Blas	252
Von Glehn, E. (consular agent, Revel), trade of Revel	66

W.

	Page.
Wages and cost of living in Milan	600
Belgian	6
in Germany	302
Hongkong	376
Liverpool	447
the cotton industries of the world	450
of telegraphers in Great Britain	47
Wallace, G. H. (consul-general, Melbourne), Australian pearl-button shells	70
Waller, J. L. (consul, Tamatave), American interests in Madagascar	436
Wamer, W. D. (consul, Cologne), wages in Germany	302
Weaving, linen, in Ghent	2
Weights and measures, Egyptian	135
of Mexico	389
West Indies, Danish, commerce of	305
fertilizers in the	35
Wheat losses in Manitoba in 1891	328
Wildman, R. (consul, Singapore), American, Russian, and Sumatra petroleum	456
Johore tea	549
Sultanate of Johore	645
tin trade of Singapore	21
Williams, C. P. (consul, Rouen), port and trade of Rouen	523
Williams, O. F. (consul, Havre), electricity and conduits in Havre	58
Wine, German, improvement and adulteration of	277
in Malaga	527
Wines and liquors in Mexico	406
Spanish	42
Winnipeg district, area of	430
Winter, J. F. (consul, Mannheim), hops in Baden, Rhein-Hessen, and the Palatinate	54
Wood, C. M. (vice-consul-general, Rome), Italian exports to the United States	504
Woolen piece goods in Mexico	396
Workshops and factories in Great Britain	140
Worsted goods in Mexico	396
Worthington, J. (consul, Malta), butterine in Malta	134
Wright, S. H. (vice-consul, Kingston), fertilizers in Jamaica	35
Wurts, G. W. (secretary of legation, St. Petersburg), the transsiberian railway	303

Y.

Yucatan, commercial	505
hennequen fiber in	506

Z.

Zurich, silk industry of, in 1891	291

O

REPORTS

FROM THE

CONSULS OF THE UNITED STATES.

No. 146.—NOVEMBER, 1892.

ISSUED FROM THE BUREAU OF STATISTICS, DEPARTMENT OF STATE.
ALL REQUESTS FOR THESE REPORTS SHOULD BE ADDRESSED TO THE SECRETARY OF STATE.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1892.